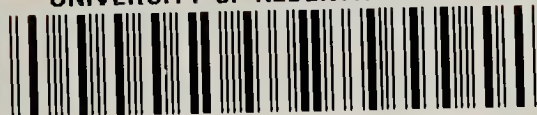


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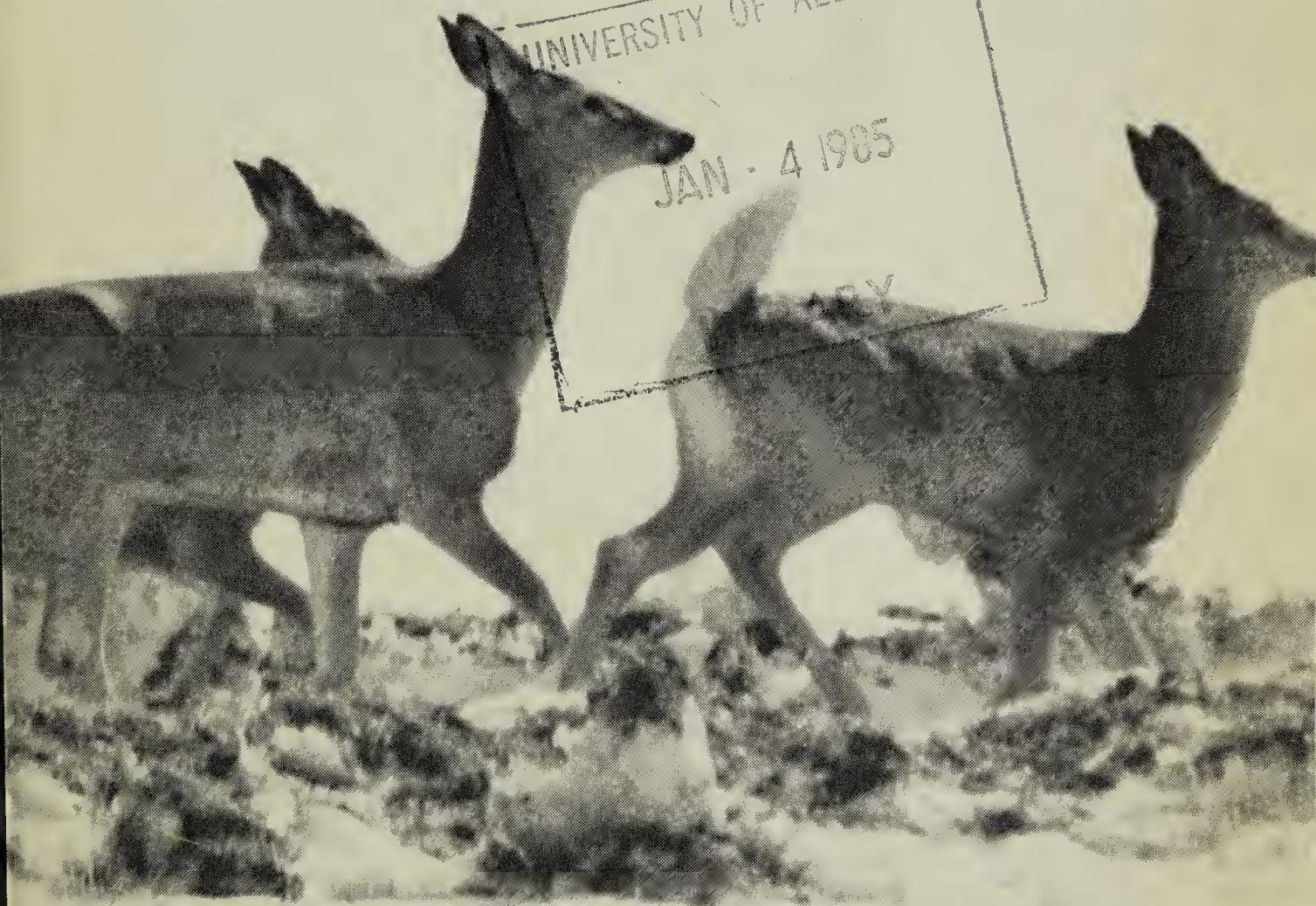
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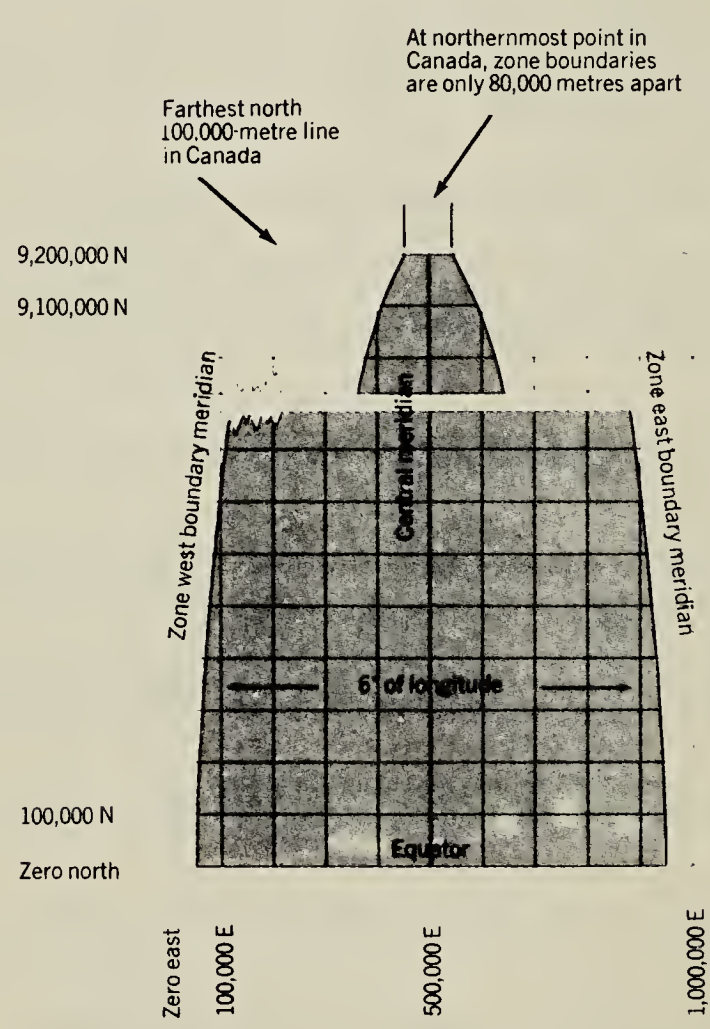
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A UTM Zone with 100,000 m grid superimosed (from “The Universal Transverse Mercator Grid, as Applied to National Topographic System Maps of Canada”).

UNIVERSAL TRANSVERSE MERCATOR GRIDS FOR RECORDING COLLECTING SITES*

F.J.H. FREDEEN, Agriculture Canada, Research Station, 107 Science Crescent, Saskatoon, Saskatchewan. S7N 0X2

Labels for biological, archaeological or other scientific specimens commonly indicate site locations either by estimating degrees, minutes and seconds, north and west, or, in settled areas by naming the nearest town, legal land survey designation or even a milepost on a highway, e.g. mile 145 on the Hansen Lake Road.

There are obvious problems with such designations. Degrees, minutes and seconds north latitude may be estimated simply enough with a romer or appropriate graduated rule. However, estimating distance west longitude by this method is difficult because lines of longitude converge by approximately 2 km for each degree northward at mid latitudes, requiring use of different scales as one moves north or south. Furthermore, scales in units of 60 are more difficult to construct than the decimal (metric) scale employed by Universal Transverse Mercator Grids.

The folly of expecting the nearest village, survey marker or highway to provide a permanent reference point is obvious. In time, many of these vanish. For instance, in a 25,000 km² area of Saskatchewan extending south and west from Swift Current to provincial boundaries, a map of 1954 shows 96 names of towns, villages, etc. Only 30 of these are shown on the 1984 provincial highway map — a loss of about 70% in 30 years. Obviously we require a method for designating sites that will remain accurate for all time and yet is simple to use.

Two main problems with using the above methods are that they are neither precise enough, nor do their data lend themselves to computer storage and retrieval. For example, on a small label for a pinned insect, one should, with brief designations be precise enough to distinguish between collecting sites not more than 100 m apart, if that is the distance separating upland and lowland areas, or neighboring streams flowing into or out of a small lake. In either instance, these represent significant habitat differences that future collectors may wish to locate on topographic maps.

A simple but refined method available today is the Universal Transverse Mercator (U.T.M.) Grid. It is so named because it is based upon the earth's surface being divided into north-south strips rather than east-west as in Standard Mercator projections.

Dr. Roger Crosskey, British Museum (Natural History), London, England, during a recent visit to the Agriculture Canada Research Station in Saskatoon, reported that in Great Britain the U.T.M. system is now generally accepted for recording collection sites. The method also is fast becoming standard in Continental Europe. Collection data are computer stored in the British Biological Records Centre in the Institute of Terrestrial Ecology, Cambridge; as a result distribution maps of various taxa can be reproduced with relatively little effort. Dr. Crosskey expressed surprise that apparently no one in North America was using the system yet. In the 1960's, Cana-

* Contribution 874

The easting and northing of the southwest corner of a map constitute the file name. The names of adjoining maps can be found by adding or subtracting 10 000 m to easting and/or northing. Map requests should specify the appropriate easting and northing.

On this map the location of the x in the sample grid is determined:

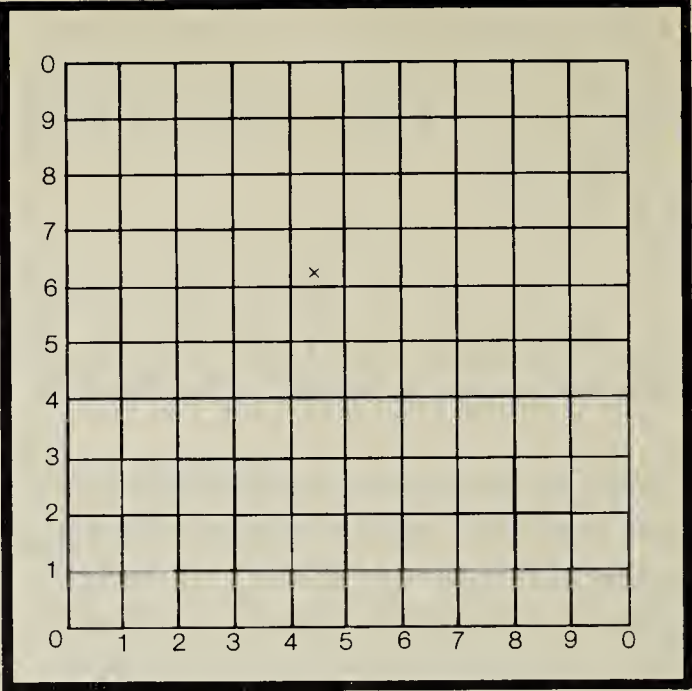
1) to the nearest 1000 m as 4 east and 6 north,

(2) to the nearest 100 m as 44 east and 63 north,

3) to the nearest 10 m as 434 east and 631 north.

In order to determine the location of this point in the overall UTM grid system, these eastings and northings are included in the map name:

e.g. to the nearest 100 m:
12 574 400 5 496 300



One thousand m universal transverse mercator grid

dian topographic and aviation maps published by Energy, Mines and Resources Canada, for the prairie region at least, began appearing with U.T.M. grid overprints so we, also, could promote its use. Furthermore, we should be advocating establishment of a central data bank for storage of collection data in Canada.

Topographic maps published by Energy, Mines and Resources Canada at a scale 1:250,000 are overprinted with a 10 km grid and marginal designations in blue; those scaled 1:50,000 with a 1 km grid and marginal designations, also in blue. The 1:50,000 maps on either side of U.T.M. zone boundaries additionally show marginal designations for immediately adjacent U.T.M. zones. These are printed in brown but lack brown grid overprintings.

For further information, and instructions how to use the U.T.M. systems, refer to a booklet published by the Queen's

Printer, Ottawa, 1969, and prepared by staff members of Energy, Mines and Resources Canada, Surveys and Mapping Branch, Ottawa. This booklet entitled "The Universal Transverse Mercator Grid, as Applied to National Topographic System Maps of Canada", (13 pages), describes the appropriate procedures for using the system.

I am indebted to Drs. Owen Olfert and Peter Mason of the Agriculture Canada Research Station, Saskatoon, for constructive criticisms during preparation of this paper.

EDITOR'S NOTE: The Forestry Division of Saskatchewan Parks and Renewable Resources has been using the U.T.M. grid for several years now for the Forest Inventory Mapping System. Maps at scales of 1:12,500 and photographic reductions to 1:25,000 have been completed for about 90,000 km² in the Provincial Forest.

A PRAIRIE RATTLESNAKE DRINKING WATER!

MALCOLM STARK, Lethbridge Community College, 3000 College Drive South, Lethbridge , Alberta. T1K 1L6

The importance of water to rattlesnakes has been a matter of some difference of opinion. Researchers have found that most rattlesnakes in captivity drink occasionally when water is available. However, this is only after prolonged periods, during which time the snakes have become accustomed to their new surroundings and life style. Although it is believed that Prairie Rattlesnakes (*Crotalus viridis viridis*) seek out water immediately after emergence from their overwintering dens because of dehydration, actual documentation of this is rare or non-existent.

In the spring of 1983, I had set out to determine how many Prairie Rattlesnakes overwintered in dens located 2.7 km south of the city limits of Lethbridge, Alberta. Live capture traps were set up at the entrances of four known active Prairie Rattlesnake dens. In total, six prairie rattlesnakes were captured over a 20 day period. Each rattlesnake was tagged with a visual metallic disc and released within 2 hours of capture except the 2 largest rattlesnakes (a male and female) which were kept in a cage until radio transmitters could be implanted in them. The cage, constructed of glass and wire fly screening, was kept outdoors and a small dish of water was kept in it at all times. Nineteen days passed between the day of capture and the day of implantation of the radio transmitters. Every 3 days during that time, one live Deer Mouse was fed to each snake. On the seventh day, the female rattlesnake was observed with her snout just barely touching the water surface in the water dish (Fig. 1). A pulsating movement was evident in her throat as the lower jaw

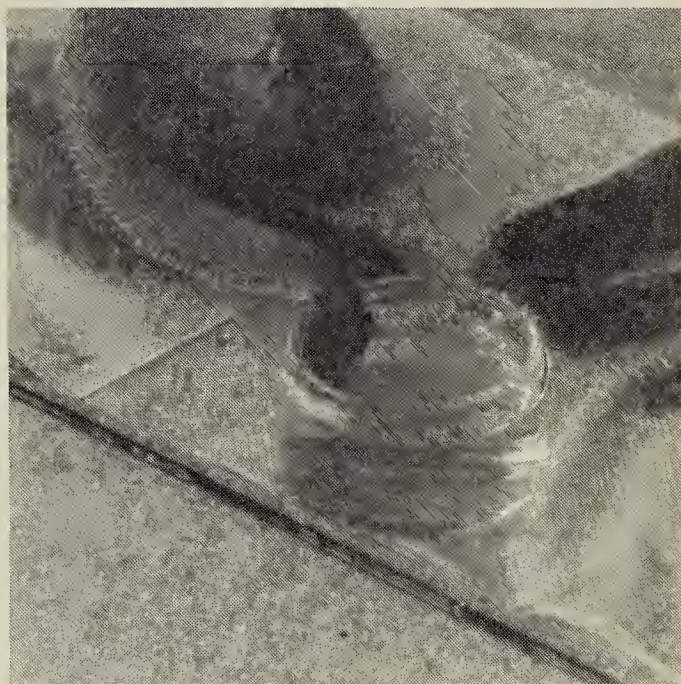


Figure 1.

M. Stark

opened and closed very slightly. Her tongue was never extended. After 2 minutes, 23 seconds she moved away from the dish. The lower level of the water in the dish was conclusive proof that she had drunk. She was not observed drinking again and the male was never observed drinking.

Prairie rattlesnakes are accustomed to dry conditions. The closest water source to the four dens is the Oldman River, a straight line distance of 550 m. From information gathered on movement over the summer of 1983, the furthest distance travelled from a den was 375 m. This implies that Prairie Rattlesnakes are largely dependent on prey for moisture requirements, although it has been suggested that perhaps they obtain moisture from water on the surface of rocks or

from puddles after a rain, or from dew on vegetation. I have never observed this.

Apparently the body fluids of the two mice consumed were insufficient in terms of moisture content to satisfy this size of rattlesnake (weight 641.5 gm, length 98 cm). Therefore, it would appear that after emergence from overwintering dens, if a sufficient amount of food (i.e. rodents, ground-nesting birds) is not quickly consumed by Prairie Rattlesnakes, they may seek out water to compensate for dehydration during the overwintering period.

A WESTERN RECORD FOR THE PLAINS HOGNOSE SNAKE IN MANITOBA

DAVID L. BRADDELL, Box 304, Reston, Manitoba. ROM 1X0

On 25 September 1983 I received a telephone call from Tom Sandy of the Oak Lake Indian Reserve, 4.8 km (3 mi.) north of Pipestone, Manitoba, about a snake two girls had killed the day before. He said it was definitely not a garter snake and asked whether I was interested in seeing and identifying it.

My wife and I whipped out to the reserve, got directions and sped to the spot where the reptile still lay, decapitated and almost decaudated (sans tail to the uninitiated). Immediate sight confirmed my suspicion: it was a Plains Hognose Snake, about 51 cm (20 in.) long. The location was NE 3-8-26 WPM in Manitoba, approximately 7.5 km (4.5 mi.) north of PTH 2 and a few hundred yards west of Pipestone Creek.

I collected the remains, put them "on ice" and reported the find to Dr. William Preston, Curator of Reptiles, Amphibians and Fishes, Manitoba Museum of Man

and Nature. He confirmed my identification. There was no doubt it was *Heterodon nasicus* and the location of the find was the westernmost record in Manitoba.

According to Dr. Preston, "it is quite possible that populations of these snakes were isolated by agriculture, but at the northern limit of their range, as here in Manitoba, the distribution would tend to be spotty."

EDITOR'S NOTE:

Previous western records for this snake in Manitoba were 10 km (6.2 mi.) west of Lauder, and at Oak Lake.¹ ² The sighting near Lauder was 25 km (15.5 mi.) south and 6.5 km (4 mi.) east of the location reported by Braddell. Oak Lake is a community 14.5 km (9 mi.) north and 20 km (12.5 mi.) east of the new record.

¹ PRESTON, W.B. 1982. The amphibians and reptiles of Manitoba. Manitoba Museum of Man and Nature. 128 pp.

² SCOTT, V.H. 1970. The Western Hognose Snake. Zoolog 11(1):15-19.

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To become a Life member, send your cheque to SNHS, Box 1784, Saskatoon, S7K 3S1.

NOTES ON THE GADWALL AT KAZAN LAKE, SASKATCHEWAN

By the late THOMAS E. RANDALL.

Arriving at Kazan Lake, some 35 miles north of Ile-a-la-Crosse on 24 June 1942, my first impression was that I had come to a veritable "duck's paradise."

Wherever one looked, the water was dotted with ducks; some in compact masses, enjoying a mid-day siesta, thousands more in looser formations, the surface feeders incessantly tipping for food, the divers going to the bottom in rapid dives, surfacing only long enough to replace the air supply in their lungs. I was at once interested in tabulating the various species and was agreeably surprised that Gadwall were present in unexpected numbers. It at once occurred to me that Kazan Lake was probably at, or near, the northern breeding limits of this duck, and my explorations of the following weeks tended to confirm this impression. On a fairly large lake lying some 15 miles west of Kazan Lake, I saw 15 pairs of Gadwall but on the great Peter Pond Lake, some 20 miles to the north, the Gadwall was present in very small numbers. At Ile-a-la-Crosse the Gadwall was very scarce, but the odd pair or two could be found in some of the small deep inlets. I never saw Gadwall in the wide waters of the open lake. Realizing that this northerly breeding ground of the Gadwall was probably unknown to Canadian ornithologists, I paid special attention to this species and was well rewarded.

The first Gadwall nest was discovered on 9 June, a hollow scratched in the soil under a gooseberry bush growing on the low shore of an island some 30 feet back from the water's edge. It contained two eggs. The "scrape" was very scantily lined with dry grass and weed stems, this material forming a ring around the outer

circumference of the hollow, with the two eggs actually lying on bare earth. The female flushed from the nest as I walked by and settled on the water about 75 yards away, where she was quickly joined by two males. For the next 5 minutes a good deal of chasing and bickering occurred which only ended when one male flew away down the lake. This sort of rivalry occurred on several occasions during the egg-laying and egg incubation period.

Each day one egg was added to the nest until 11 were deposited. As egg-laying progressed, new material was added to the nest. When it held 11 eggs, it was a fairly bulky mass of dry vegetation mixed with a good supply of down and there was ample covering to protect the eggs when the duck was absent.

Egg-laying was suspended on the 12th day but the final egg was added to the clutch on the 14th day. The duck stayed



Gadwall

Lorne Scott

on the nest during these two days except on three occasions when I flushed her from the nest. Then she immediately returned to the nest, once when I stood only 20 yards away.

Thirty-five days from the laying of the first egg I found the eggs were all "pipped" except two. Unfortunately a severe storm prevented an examination of the nest on the thirty-sixth day, but on the following day I found only one egg in the nest and that egg contained a dead embryo. I calculated the incubation period at 22-23 days.

Nesting

For nesting purposes the Gadwall does not approve of the tall bush, neither does it like open grassland. At Kazan Lake I found many nests a few yards back from the water's edge around the low rim of the islands. A fairly strong growth of grass with an occasional dwarf bush to add extra cover, appears to be the Gadwall's ideal nesting quarters. On the prairies of southern Alberta and Saskatchewan the landscape is dotted with large and small clumps of buck-brush and briers, and the Gadwall takes full advantage of this excellent cover.

At Kazan Lake, three islands terminated in a narrow point. Here the mucky soil was honey-combed with muskrat runs and walking was quite treacherous. A dense cover of nettles and semi-aquatic weeds covered these long points and the Gadwall found the covering greatly to their liking. The three points held 4, 5 and 7 nests respectively, together with one White-winged Scoter, 5 Redhead and 5 Lesser Scaup nests.

In all, 38 Gadwall nests were found at Kazan Lake, only one of which was on the mainland. The largest clutch was 16 and the smallest incubated clutch was 5 eggs. The latter was found on 29 July and was probably a second laying.

Three nests were parasitized by the Redhead, with 1, 3 and 5 eggs being laid in the respective nests. While I have

found a great deal of Redhead parasitism in the nests of other ducks on the prairies of Southern Alberta, it was not unduly prevalent at Kazan Lake and when it did occur, the Lesser Scaup was the usual victim. I could discover only one cause for this. Along the east side of the lake were scattered areas of *Phragmites*, the favourite nesting places of the Redhead, Mallard and Lesser Scaup. Here only one Gadwall nest was found, under a dwarf willow bush growing on the edge of the reeds. Thus it was only on the three nettle-covered points previously mentioned that Gadwall and Redhead nested together.

Alberta Notes:

Gadwall numbers fluctuated greatly in Southern Alberta. They were plentiful in 1919-20, then decreased rapidly until 1927 when they reached such a low point that I found only one nest containing nine eggs. It was 1936 before I saw another Gadwall nest, but by 1940 the species had recovered to become fairly numerous once again. It is noteworthy that the Green-winged Teal also suffered a great loss of numbers during the same period.

In Southern Alberta, I have seen as many as nine Redhead eggs with nine Gadwall eggs. The Gadwall, Canvasback and Lesser Scaup are the three species which successfully hatched Redhead eggs.

In 1944, while banding ducks for Ducks Unlimited, I trapped a female Mallard with six full-grown ducklings which were almost certainly Mallard-Gadwall hybrids. The beak and legs were typical of the Gadwall, while the plumage of the upper back showed a strong diffusion of reddish-brown and four of the ducklings showed a trace of the rust-coloured patch on the shoulder of the wings.

EDITORS NOTE: We wish to thank Mrs. Barbara M. Jensen of Calgary for supplying her late father's manuscript.

MIGRATIONS AND FORAGING HABITS OF BALD EAGLES IN EAST-CENTRAL ALBERTA, 1964-1983.

DICK DEKKER, 3819-112A Street, Edmonton, Alberta. T6J 1K4

Abstract

At lakes 30-60 km east of Edmonton, Alberta, 187 Bald Eagles were sighted in spring and 626 during fall, 1964-1983. First and last dates for spring and fall observations were respectively 31 March - 8 May, and 15 September - 18 December. In spring immatures have a longer migration period than adults, starting a day earlier, continuing a week later and with a peak one week later. The ratio of adults to immatures is 1:2.5. During fall, the passage of immatures was about 3 weeks in advance of the adults, and the age ratio was 1:1. Fall migration lasted 2.5 times as long as the spring movement and peaked in November, when up to 15 eagles were seen together on frozen lakes. Of 118 attempts at catching ducks, 14 were successful, of which 8 are described in detail showing a variety of hunting methods. The eagles also fed on carrion, caught voles, and attempted to seize a Muskrat.

Introduction

Bald Eagles nest in northern Alberta and sparsely in the southwestern Rocky Mountains of the province.¹⁰ They are highly migratory and few winter in Alberta. In January and February, I observed them only at two locations where industrial effluents kept water open: the Bow River downstream from Calgary, and at Wabamun Lake, 60 km west of Edmonton (unpublished field notes). During migration periods, especially in March, Bald Eagles are locally common in the foothills west of Cochrane, Alberta.³ They are seen at central Alberta lakes in late October and November.¹¹ This paper gives information

on the timing, age structure and behaviour of migrating Bald Eagles in spring and fall at Beaverhill Lake and other lakes 30-60 km east of Edmonton.

Study Area and Methods

During spring and most of autumn, my observations were restricted to Beaverhill Lake. In November and December I also visited Cooking and Hastings Lakes, and sometimes Miquelon and Ministik. Beaverhill Lake is approximately 20 x 15 km and surrounded by open and brushy pasture land. The other lakes vary from roughly 10 x 3 km to 3 x 1 km and are bordered by mixed woods of Trembling Aspen and White Spruce.

I spotted many eagles in flight, but in late fall they often sat on the ice of frozen lakes, and I spent up to 4 hours at a time observing them through 10x binoculars or a 20x telescope from a parked vehicle. From 1964 through 1983, I visited the study area 435 days in March, April and May and 463 days during September through December. Daily time afield varied from 2 to 17 hours.

Adult Bald Eagles are easily separated from immatures (by the white head and tail). I did not attempt to separate different age classes of immatures. Eight Bald Eagles with nearly white head and tail but still showing light blotches and streaking in the remainder of their plumage, especially the underwing linings, were included with the adults. Godfrey stated that because of similarities in size and plumage "immature Bald Eagles are likely to be confused with Golden Eagles".¹⁰ From 1964 through 1983, I saw only 32

Table 1. SPRING MIGRATION OF BALD EAGLES IN CENTRAL ALBERTA.
DATA OVER 20 YEARS, 1964-1983.

<i>Period</i>	<i>Adult</i>	<i>Immature</i>	<i>Unclassified</i>	<i>Total</i>	<i># days</i>	<i>Eagles/day</i>
March 15-23	0	0	0	0	12	0
24-31	0	5	1	6	19	0.32
April 1-7	9	3	3	15	26	0.58
8-15	20	28	7	55	45	1.22
16-23	15	44	11	70	46	1.52
24-30	3	23	1	27	74	0.36
May 1-7	0	12	1	13	92	0.14
8-15	0	1	0	1	121	0.01
TOTALS	47	116	24	187	435	0.43

Golden Eagles in the study area, all except one over land.⁶ About 20% of all eagles seen were too far away for positive identification. If they were dark-headed and flew over land, I omitted them to avoid possible misidentification, but distant dark-headed eagles flying low over lakes or sitting on the ice were assumed to be immature Bald Eagles. Obvious and probable duplicate sightings made on the same day were excluded from the totals.

Spring and Fall Migrations

During spring, 1964-1983 I saw a total of 187 Bald Eagles at Beaverhill Lake. The adult-immature ratio was 1:2.5 (Table 1). Early and late dates were respectively 31 March and 8 May, with adults and immatures arriving at about the same time. Immatures were sighted 11-13 days after the last adults had passed (Table 2). Ninety-four percent of

adults passed from 1 to 23 April; 92% of immatures were seen from 8 April to 7 May (Table 1). Adults peaked the week of 8 April, immatures the week of 16 April.

From September to December, 1964-1983, I sighted a total of 626 Bald Eagles. The adult-immature ratio was about 1:1. Seventy-three percent of adult eagles were recorded in November. Immatures peaked in the last week of October (Table 3). Earliest and latest fall sightings were on 15 September and 18 December respectively, with adults arriving and departing 2-3 weeks later than the immatures (Table 2).

Foraging Behaviour

The Bald Eagle's "staple diet in most areas is dead or dying fish."² All lakes in the study area are highly alkaline or very shallow and contain few or no fish larger than minnows, and I have never seen

Table 2. EARLY AND LATE DATES FOR MIGRATING BALD EAGLES IN EAST-CENTRAL ALBERTA, 1964-1983.

	<i>Spring</i>		<i>Fall</i>	
	<i>Adult</i>	<i>Immature</i>	<i>Adult</i>	<i>Immature</i>
Earliest date sighted	1 April	31 March	2 Oct.	15 Sept.
Mean early date	10 April	12 April	19 Oct.	26 Sept.
Latest date sighted	26 April	8 May	18 Dec.	30 Nov.
Mean late date	17 April	28 April	21 Nov.	7 Nov.

Table 3. FALL MIGRATION OF BALD EAGLES IN CENTRAL ALBERTA.
DATA OVER 20 YEARS, 1964-1983.

Period	Adult	Immature	Unclassified	Total	# days	Eagles/day
Sept. 8-15	0	2	0	2	46	0.04
16-23	0	5	1	6	67	0.09
24-30	0	21	7	28	59	0.47
Oct. 1- 7	9	28	10	47	51	0.92
8-15	11	16	8	35	35	1.00
16-23	11	30	9	50	40	1.25
24-31	15	41	17	73	41	1.78
Nov. 1- 7	33	22	15	70	33	2.12
8-15	45	32	69	146	30	4.87
16-23	32	20	33	85	25	3.40
24-30	48	14	11	73	17	4.29
Dec. 1- 7	5	0	0	5	13	0.38
8-15	5	0	0	5	3	1.66
16-23	1	0	0	1	2	0.50
24-31	0	0	0	0	1	0.00
TOTALS	215	231	180	626	463	1.35

eagles feeding on fish there. They often used carrion of domestic or wild mammals and waterfowl killed by botulism or other causes.

The Bald Eagle's occasional predatory habits are well-known. Spencer reviewed the feeding habits of Bald Eagles wintering in the midwestern United States and quoted numerous observers who stated that, in the absence of carrion and fish, the eagles were attracted to concentrations of waterfowl, and picked off ducks and geese crippled by hunters.¹² Bent and Dekker gave several accounts of eagles pursuing and capturing waterfowl.¹⁻⁵

During this study, waterfowl appeared to ignore Bald Eagles unless they approached closely; then most surface-feeding ducks and geese took to the air. Diving ducks and coots often stayed on the water during overflight by an eagle and attempted to escape direct attacks by diving. However, when the lakes were frozen and the remaining waterfowl were concentrated in patches of open water, surface-feeding ducks and Canada Geese did not always flee at the approach of eagles. It is possible that a

rather high percentage of these late-staying waterfowl are diseased. I saw several ducks spontaneously leave water-holes, either walking or sliding along the ice apparently unable to fly on their way to land. Some reached the shore, others were intercepted by eagles. One was killed by a Coyote that left the carcass on the ice. It was later eaten by eagles.

The Bald Eagles habitually sat on the ice near water holes, often in loose aggregations. The highest number counted from one vantage point was 15 on 16 November 1976 at Cooking Lake. Highest daily count occurred on 11 November 1977, when there were 11 eagles on the ice of Cooking Lake, 7 on Hastings and 5 on Beaverhill Lake.

Bald Eagles often flew towards swimming waterfowl but whether or not such approaches were hunting attempts was not clear except when the eagle actually swooped at a duck. However, I have assumed that all overflights of diving, splashing or flushing waterfowl were bonafide hunts if the eagle passed over them at an altitude of less than 3 m. Of 118 such assumed hunting attempts, 69 involved swoops at diving or flushing

waterfowl, 9 involved a brief hover over splashing or massing birds, and 3 included the pursuit of flushing or flying birds. Fourteen of these 118 assumed hunts ended in capture of prey, a success rate of 12%. On 15 other occasions I saw eagles carrying or feeding on birds, probably waterfowl which they had just caught. Incidents of piracy or attempted piracy were common, and most food items "changed hands" several times. Commensal feeding habits of Bald Eagles on wintering grounds have been reported by many observers.¹²

I observed foraging behaviour from 0900 to 1500 h. When only one or two eagles were present, they appeared to complete their foraging in the early morning. If eagles were numerous in a locality, they commonly shared most food items and foraging activity could occur throughout the day. I did not see any feeding or hunting eagles on days when the temperature did not rise above -12°C. Steenhof reported reduced foraging activity of wintering Bald Eagles during periods of unfavorable weather, apparently as an energy saving measure.¹³

During November 1976, the water holes in Cooking and Hasting Lakes were located close to roadside vantage points and remained open later than in other years, allowing exceptional opportunities for observation. Most foraging activity that I saw occurred during that month. Following are eight examples of successful hunts showing a variety of methods.

3 October 1965. 0900 h Beaverhill Lake. An immature Bald Eagle flew over the lake at about 10 m, flushing numerous waterfowl. It swooped down at a swimming Coot, that dove with a splash. The eagle flew tight circles over the area and swooped again when the Coot emerged. It dove. At the sixth swoop, the eagle seized the prey and carried it to land. Prior to this hunt, the eagle had made two similar but unsuccessful series of swoops at diving birds,

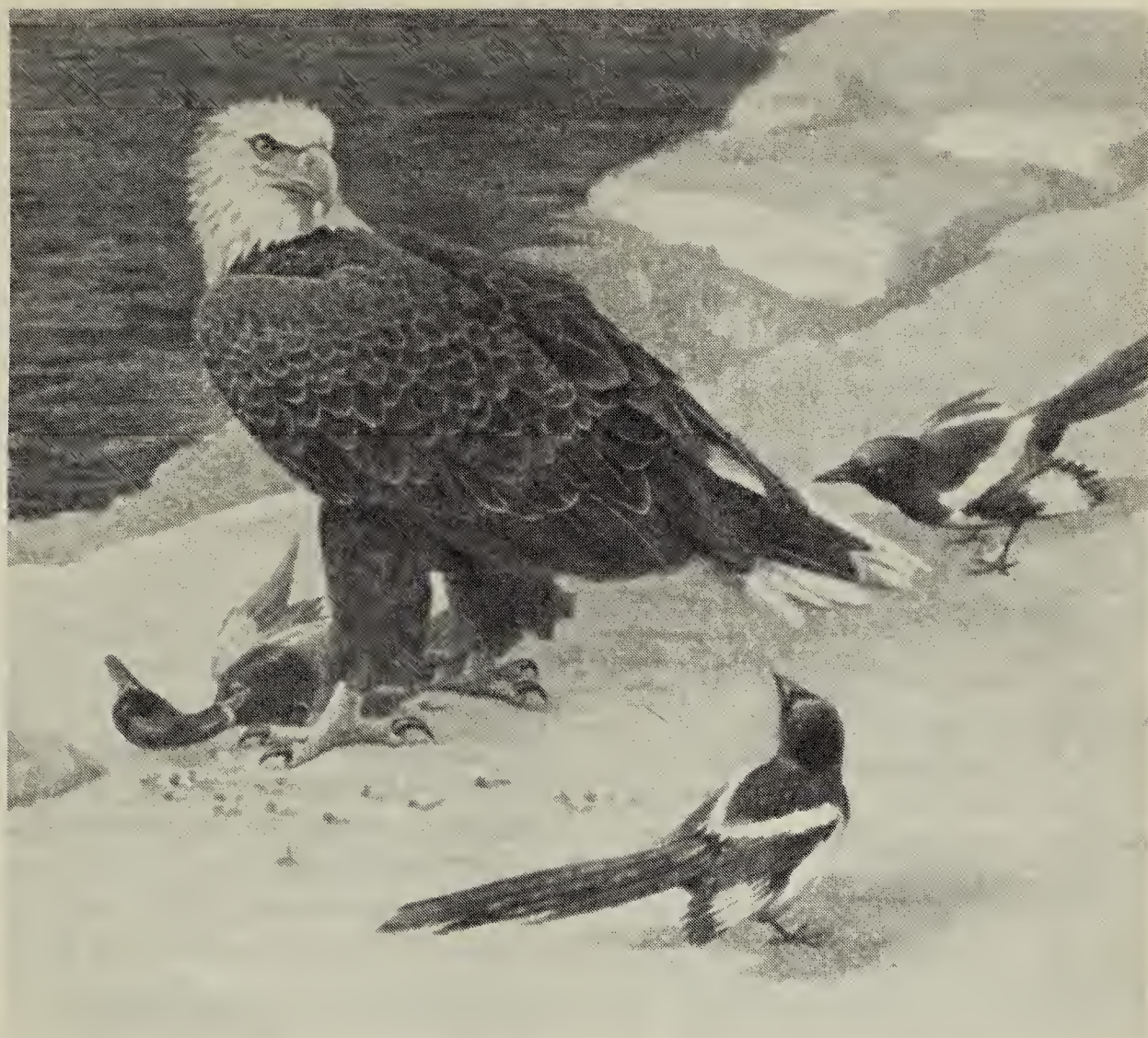
probably also coots.

6 November 1976. 1100 h Hastings Lake. Flying at about 10 m against a strong wind over the frozen lake, an adult Bald Eagle approached a water hole in which about 100 ducks, mostly Lesser Scaup were massed together and splashing about. A lone female Mallard flushed well ahead of the eagle and dropped back into the water just after the eagle had passed. In a very swift plunge the eagle doubled back, seized the Mallard and carried it to the ice.

6 November 1976. 1300 h Beaverhill Lake. An adult Bald Eagle flew up from the ice and approached a flock of about 60 Mallards swimming in a patch of open water. All except one of the ducks flushed and left. The eagle turned to the lone Mallard, seized it and carried it to the ice.

14 November 1976. 1230 h Cooking Lake. An adult Bald Eagle, that had been standing on the ice for some time, flew at 2-3 m to a water hole. About 80 ducks, mostly Lesser Scaup, hurriedly left the edge of the ice, on which they had been resting, and entered the water. The last bird, a drake scaup was seized by the eagle in one foot and carried away.

15 November 1976. 1200 h Hastings Lake. An unidentified duck left a waterhole and flew low over the frozen lake for about 0.8 km before descending onto the ice. Immediately two immature Bald Eagles that had been standing on the ice some distance away, flew towards the duck; the first eagle seized it. At the approach of the second eagle, the first one flew off, carrying the duck, but dropped it onto the ice. Both eagles fought over it and were joined by a third.



After a bald eagle catches a duck and begins feeding, magpies fly up to scavenge the remains. Although they are saucy enough to pull the eagle's tail feathers on occasion, the magpies are ignored by the big bird, which keeps an eye out for more troublesome scavengers, other eagles.

Oil painting by Dick Dekker

19 November 1976. 1400 h Hastings Lake. In about one hour's time, an adult Bald Eagle made 12 low passes over a water hole with about 200 ducks, mostly Lesser Scaup, and returned to the ice for 3-10 minutes. During six overflights, the eagle either hovered briefly over the massed ducks or swooped at a single duck that dived. On one occasion, the eagle plunged feet first into the water, sinking up to its belly, but rose without prey. Eventually, after sitting on the edge of the hole for a few minutes, it walked into the water until breast-deep and returned holding a duck in one foot.

20 November 1976. 1300 h Cooking Lake. Two immature Bald Eagles hovered against a strong wind 2-3

m above a water hole and were briefly joined by an adult, which flew to the ice nearby. The immatures each swooped several times at a single duck, probably a female Mallard, that dove every time. After a brief rest on the ice, the two immatures resumed their hunt until one of them, a light coloured individual, plunged into the water and lay on the surface with wings extended for half a minute. It rose, holding a duck in its feet, and flew to the edge of the ice, where it was immediately rushed by the adult eagle. The duck was released and escaped into the water. Presently, the two immatures again hovered over the hole and each swooped 3-4 times until the light coloured one plunged into the water. It rose with apparent difficulty, carry-

ing the duck, but dropped it when the other immature swooped at it. After a brief rest, the two eagles began hovering again with the same result as before: the light coloured eagle plunged, lay on the water for half a minute, and rose with a duck in its feet. Twice the eagle fell back into the water before it reached the ice. At the approach of the adult, the immature surrendered the wing-flapping duck, which was killed by the adult and consumed in part by the adult and the two immatures. A third immature cleaned up the leftovers.

21 November 1976. 1230 h Cooking Lake. One adult and three immature Bald Eagles were standing on the ice near a small water hole in which 15 ducks, mostly Mallards and Lesser Scaup, were swimming about. One immature flew low over the hole; all the ducks splashed and dove. After 10 minutes, the same eagle hovered briefly over the hole and plunged in, submerging up to its neck. It came up with thrashing wings and lay on the surface for a few moments and then it "rowed" to the edge of the ice about 6 m away. It climbed out of the water with apparent difficulty, holding a duck in one foot and pulling it up with its bill. The eagle fed on its prey while the other eagles stood around to snatch a severed wing or leg and clean up the remains after the captor flew to nearby trees.

On two occasions, Bald Eagles attempted to overtake ducks flushed at close range and pursued them for 10-20 m until the ducks abruptly changed course. On 13 November 1978 an immature eagle flushed a flock of ducks from the ice of Hastings Lake; all ducks returned to the water except one which flew out over the frozen lake, climbing at first, then dropping low over the ice. It was chased by the immature eagle and an adult in a close

pursuit for about 800 m. First the adult then the immature actually seized the duck in its feet, holding it for a moment until the second eagle swooped at the one holding the duck, which was then released. Eventually, the duck reached cover in reeds.

On 10 April 1966, four immature eagles stood on the ice of Beaverhill Lake near a Muskrat that did not move except to dodge an eagle's pounce. Over a period of 20 minutes I saw five or six pounces. All failed and eventually the eagles flew away.

On 8 April 1972, four immature Bald Eagles, one adult Bald and one adult Golden Eagle, appeared to be catching Meadow Voles that were flooded out of the grass in great numbers by meltwater. I observed the eagles make short flights, walk about, and pick up small dark objects that looked like voles. Numerous gulls and crows were doing the same.

Discussion and Conclusions

Although the earliest spring dates on which I recorded adult Bald Eagles roughly coincided with the earliest dates for immatures, the peak for adults was a week earlier than for immatures, which is in accordance with data from Saskatchewan, where the mid-date for adults preceded the mid-date for immatures by 7 days.⁸ However, the advent of spring migration in Saskatchewan was about two weeks earlier than in central Alberta, and the adult-immature ratio in Saskatchewan was 3:1, whereas I found a ratio of 1:2.5. The reasons for these disparities are not clear. Perhaps the Saskatchewan data, obtained from the files of the Saskatoon Natural History Society, are biased in favour of adult Bald Eagles, which are easiest to identify in the field and probably a higher percentage are reported. It is also possible that, in Alberta, early migrating adult Bald Eagles avoid the central plains and choose a different route. At Cochrane in the foothills of western Alberta, I sighted 59 adults and 6 immatures in 37 observation days in March,

1965-1980³ (Dekker, unpublished data). In 1970 I suggested that, in March, the foothills region of Alberta offers more favourable climatic conditions and better foraging possibilities for eagles than the plains east of Edmonton. Gerrard and Hatch report that migrating Bald Eagles show a preference for hilly terrain where the early formation of thermals assist them in soaring flight.⁹ Such a preference may explain the scarcity of spring migrants in the study area which is quite flat, especially around Beaverhill Lake where all spring observations were made.

Fall migration of Bald Eagles through the study area progressed much more slowly than the spring passage and some eagles stayed as long as there was some open water and waterfowl. Gerrard et al. reported a leisurely fall movement of wing-marked Bald Eagles south from Saskatchewan with a tendency of the birds to remain in favourable areas for several weeks at a time.⁷

The Bald Eagles that I observed appeared quite successful in hunting waterfowl although most of their prey were probably crippled or sick (they failed to flee or dive when approached). The interaction of the Bald Eagles and ducks offers an excellent example of the selective effect of predation. Evidence for such an effect of eagle predation on waterfowl has never been demonstrated, although Dekker reported that the failure of ducks to use escape tactics typical of the species characterized a significant majority of successful hunts by Peregrine Falcons.⁴ Observations in this study indicate that the mass of waterfowl proved to be quite capable of escaping eagle predation, whereas individual ducks that did not fly away were attacked and often caught.

Acknowledgements

Since 1974 most of these observations were made during raptor surveys for the Alberta Fish and Wildlife Division. G. Erickson and R. Fyfe critically read the manuscript. Denise Fitz did the typing.

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RESPONSE OF NON-PREDATORY BIRDS TO A SIMULATED SMALL MAMMAL

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Our most effective lure for netting Great Gray Owls is an artificial mouse cast out and retrieved with a bait-casting rod and reel.³ This "fishing" technique works best on snow in winter when owls are usually hungrier and, hence more responsive. However a few owls have been taken by us with the lure drawn over gravel roads. This particular lure is a good model of a large meadow vole (see Figure 1). In motion it resembles a scurrying vole — much more so than any other lures I have seen. Northern Hawk-Owls, Great Horned Owls, Barred Owls and Snowy Owls also have responded to this lure. The ability of Great Gray Owls and Northern Hawk-Owls to come to the lure from great distances is evident of their keen vision. Response to the lure by a Great Gray Owl even when the lure was not in motion suggest a quick perception of the basic characteristics of its usual prey. In this case a Great Gray Owl flew in between three people standing by a car in an attempt to seize the lure which was dangling from the line on the casting rod as we were making preparations to cast for this owl.³ An even more astonishing example of this kind of behaviour was observed by George Nykulaik who had a Great Horned Owl fly in and carry off a lure that was hanging from a rod leaning against the side of his car (pers. comm., 1978). More surprising still is the fact that Nykulaik's lure — a plastic imitation mouse — was pale blue! If I hadn't seen a photo of the owl sitting on the lure on the side of the road I wouldn't have believed the story. This business of the colour of the lure is an aspect that merits further investigation.

Predatory non-raptors, such as Northern Shrikes and Gray Jays, have occas-

ionally responded to an artificial lure or a live mouse. In winter 1982-83, for example, Herb Copland and I observed a Northern Shrike show mild interest in a cast lure, and in February 1984, Robert R. Taylor had a Northern Shrike respond briefly to a similar lure. On 10 February 1984, while Herb was attempting to lure a Great Gray Owl with a live laboratory mouse at Lac du Bonnet, two Gray Jays showed an interest in the mouse, one even hovering over Herb as he knelt in the snow. If he hadn't flinched when he heard wings overhead the Jay would have likely landed on his head. For a short time after Herb left the site, the jays continued to fly about the spot where they had seen the live mouse. Accounts in Bent's Life History series of the carnivorous habits of Gray Jays, and especially a recent report of a Gray Jay preying on a small live mammal, possibly a shrew, show that this species will occasionally take live mammals.^{1 2} Oddly, we have no observations of Gray Jays responding to our artificial lure though there have been lots of opportunities for them to do so.

On the other hand, the response of non-predatory birds to lures are inexplicable. What is one to make of our observation of a Downy Woodpecker's response to our lure, and Chris Siddle's remarkable observation of a flock of Common and Hoary redpolls responding to a frozen vole cast and retrieved over the snow?^{4 5} Presumably there is something compelling about a lure moving across the surface of the snow (whether a dead vole, or stuffed vole skin or an artificial lure) that elicits investigative behaviour. Two additional incidents of non-predatory birds responding to a lure provide further examples of this peculiar behaviour.

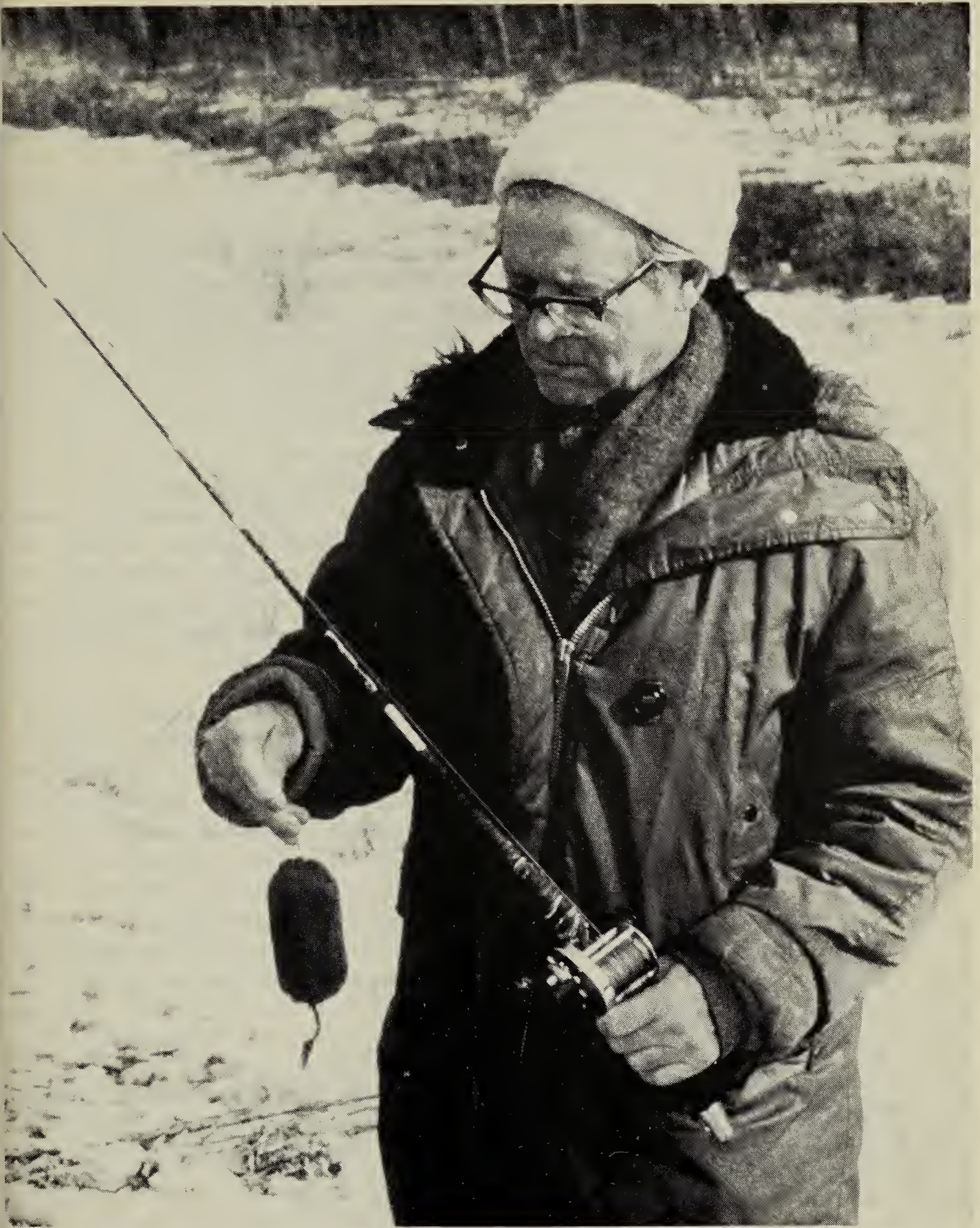


Figure 1. *Author with casting outfit and artificial mouse for luring Great Gray Owls.*
Herb Copland

On 25 November 1983, about 0830 h., I briefly observed House Sparrows responding to the lure. This was in our

backyard in Winnipeg. It was overcast and snowing lightly at the time. About 30 House Sparrows were perched in trees

near a feeder when I made a cast across soft snow just to straighten out the line prior to taking the outfit out the next day to lure owls. As soon as I started reeling in the lure the sparrows fluttered out from their perches and briefly hovered over the lure as it moved along, but without coming down to it. On the second cast and retrieve there was much less reaction, and on the third, none at all. I was surprised that the House Sparrows reacted to the lure at all because these birds are accustomed to the presence of several red squirrels and one gray squirrel that regularly visit the feeder. On no occasion have I ever observed any response, other than avoidance behaviour, by our sparrows to these mammals.

At Pinawa Bay on Lac Du Bonnet on 5 February 1984, five Black-capped Chickadees showed a strong response to the lure. Herb Copland and I were standing talking to Ray Tuokko at the Tuokko family home; it was -30°C , clear and with a slight wind. It was a fine, bright morning and pleasant in the shelter of trees. Blue Jays, chickadees and House Sparrows were all about and vocalizing. About 1120 h. I decided to try the lure on several House Sparrows, but they flew off before I could make a cast. Instead I tossed the lure a short distance on the clean surface of the snow-covered road for two nearby chickadees. As soon as the lure was set in motion there was an instant response. Both birds fluttered towards the moving lure, hovering above it and following it as it was reeled in. I cast it out two more times and three additional chickadees came from about 50 feet and reacted in much the same way. We were all astonished to see that the closer the lure came to me, the greater the response of the birds! The birds landed on the road near the lure, in front of me and beside me in their efforts to get close to the lure. The chickadees showed an unmistakable interest in the lure, even darting in towards it in mid-air as I was making a cast. Once the casting rod accidentally struck a chickadee that was fluttering in

front of me when I was making a cast. Eventually, I put the rod and lure in the car for we were anxious to get on our way and look for more Great Gray Owls.

I now regret that we did not get Ray Tuokko to take some photos of the responding chickadees, for when we repeated the experiment on a few other occasions in similar circumstance in February 1984, there was practically no response. On 26 February 1984, for example, I cast and retrieved the lure several times near the Tuokko feeder in the presence of Pine Grosbeaks, Common Redpolls and Black-capped Chickadees. One chickadee flew to a perch closer to the lure, but did not fly down to it, and at one moment a redpoll seemed to vocalize upon first seeing the moving lure. A live laboratory mouse released onto the surface of the snow drew no apparent response.

Further observations of non-predatory birds responding to a simulated small mammal are needed to provide insight into the nature of this phenomenon. Since anyone with a fishing rod and an imitation mouse can test the response of birds, especially at backyard feeders, it is hoped that our brief observations will eventually be supplemented by new accounts of this unusual behaviour.

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RED-HEADED WOODPECKER PREDATION

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On a morning walk along paths in a wooded area at Whytewold, Manitoba, on Lake Winnipeg 16 June 1984, I heard and saw a male and female Northern Oriole close to an old pensile nest which I had observed in 1983. The nest was approximately 5.4 m from the ground in a cluster of slender hanging branches of an aspen.

Since I wished to keep a record of this nest, I visited the site again 19 June. To my surprise, however, I saw an Eastern Kingbird fly into it, move around a little, and then fly away. On 25 June I noticed the female Kingbird was sitting; the male was perched on a branch of a tree close by.

While the Eastern Kingbird generally nests on the branch of a tree, well out from the trunk, I have also seen their nests in such places as the top of a broken-off tree trunk, in a small cavity at the side of a neon sign on a building, in an eavestrough, as well as in the same tree as a Northern Oriole nest. This was the first time, however, that I had ever seen a kingbird sitting in a Northern Oriole's nest (old or new). Whether the pair of orioles had intended to make use of the old nest, I do not know. I did wonder if the kingbirds had confiscated it. Harrison makes mention of such an occurrence.⁴

I continued my observations every other day as I was anxious to know when the young would be hatched. However, 4 July, as I neared the nesting site, I heard a cacophony coming from the kingbirds. Upon my hurried arrival I noticed that the two kingbirds were dive-bombing a Red-headed Woodpecker which was clinging to slender leafy branches immediately below the nest. The Red-headed Woodpecker seemed

determined to get at the eggs, and the kingbirds just as determined that he would not. They viciously attacked the Woodpecker's head but he clung tenaciously to short branches close to the nest. Even when he appeared to be stunned and fell to the ground, he flew up again close to the nest, apparently even more determined. Finally, after the battle had raged for a period of some 30 minutes, the woodpecker made a lunge at the nest, tugged and tugged and tore a piece off the top. It ferociously pecked at all the eggs and threw some pieces of shell overboard. The dirty deed was done! The Kingbirds' eggs and nest were destroyed.

I have observed Red-headed Woodpeckers for many years at Whytewold, but I have never witnessed such an event as this.^{1 2} Godfrey, however, mentions that this bird "is not above taking eggs and young of other birds on occasion."³

Upon referring to A.G. Lawrence I found the following in a 1928 column: "Several years ago we saw a Red-headed Woodpecker in North Kildonan drag a Flicker by its beak from a nesting hole in a telephone pole. This was accomplished only after a tussle, but so vigorous was the Red-head's pulling and so sudden the Flicker's emergence, both birds fell like stones a distance of 20 feet or so to the ground. Which was the rightful owner of the nesting hole we do not know."⁵

In a further column in 1950, A.G. Lawrence mentioned that he had had a report of Red-headed Woodpeckers supposedly attacking and killing young birds in the nest. He states, "we have no personal or reported evidence of this nature but A.C. Bent in his monumental *Life Histories* quotes several observers'

reports of the Red-headed Woodpecker attacking and killing young birds and raiding nests for eggs. Most of them relate to hole-nesting species and go back as far as the 1880's and Mr. Bent writes: 'But not all Red-headed Woodpeckers are cannibals or murderers . . . and all of them have some harmless and useful feeding habits . . . '."6

The behavioral patterns of our feathered friends never cease to retain the interest of a birdwatcher!

I wish to thank Mr. Herb Copland for providing references from A.G. Lawrence.

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BIRDS NESTING WITH QU'APPELLE BANK SWALLOWS

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In 1980 and 1981 we studied the nesting ecology of Bank Swallows at 60 colonies in a 6,129 hectare area around Katepwa Lake in the Qu'Appelle Valley.¹ During the course of this study we noted five other species of birds nesting in the Bank Swallow tunnels.

Given the House Wren's propensity for stuffing twigs into any available cavity, perhaps the greatest surprise is that we found only two pairs nesting in Bank Swallow burrows. However, only 12 of the 60 colonies had any wooded vegetation at the bank top. The House Wrens nested in 2 of these 12 potential sites. Both nests were believed to be successful; young were observed fledging at one nest.

Just outside the Qu'Appelle Valley south of Lebreton lies a sandy grassland which is used for pasture and exploited for gravel. We observed five Mountain Bluebird nest attempts in Bank Swallow tunnels at these gravel pits. Four of the nests were successful. One pair raised two broods in the same tunnel, another initiated its nest after Bank Swallows had fledged on 5 July.

House Sparrows not only nested in, but apparently were year round residents at certain colonies. Almost all nestings by House Sparrows were at two colonies in the village of Lebreton and one on a hillside near the outlet of Katepwa Lake. This latter site, which was at least 0.25 mi.

from the nearest buildings, was used by eight pairs of House Sparrows in 1980. House Sparrows were seen on each subsequent visit to the colony including an observation of 21 on 18 February 1984. We believe the Bank Swallow tunnels at this colony provide year-round shelter for House Sparrows.

The three colonies used by House Sparrows were characterized by fine-particled soils which eroded slowly. The Bank Swallow tunnels last for several years and may allow House Sparrows to establish a nesting tradition. Most Bank Swallow colonies in the area were in sandy soils where tunnels usually collapsed within one or two years.

Three Belted Kingfisher nests were observed in Bank Swallow colonies. The history of the nest at Katepwa Lake is not known. The other two nests which were on the bank of, and adjacent to, Moose Jaw Creek in Buffalo Pound Provincial Park, were in marked Bank Swallow tunnels from the previous year. While the Kingfisher had increased the diameter and depth of the tunnel, use of an old Bank Swallow tunnel must have saved significant effort in excavation.

Our fifth observed species, a Brewer's Blackbird, nested in a niche created by a bit of erosion at a swallow tunnel mouth. Although the nest was not really in the burrow, the Bank Swallow tunnel was the essential feature creating the nest site. This nest was pulled off its ledge by a passerby.

Each of these species seemed to interact little with the Bank Swallows. House Sparrows occupied tunnels which may have otherwise been reused by Bank Swallows. This may force some Bank Swallows to excavate new tunnels or even move to other colonies, but this interaction was not studied. The House Wren may have been an asset to the colony due to its vigilant defence of its territory against potential predators. On 13 June 1980 we watched a House Wren

chase a Least Chipmunk and a Thirteen-lined Ground Squirrel off the nest bank. This was an amazing sight as the House Wren is tiny, even beside the chipmunk. Nonetheless, both departed rapidly without argument. Interestingly, the Bank Swallows themselves had totally ignored the presence of these potential nest predators on the nest bank.

Some of you may have expected some mention of Rough-winged Swallows. No Rough-winged Swallows nested anywhere in our 6,129 hectare study area in 1980 or 1981. While we have found Rough-winged Swallow nests further west in the Qu'Appelle near Craven and in Buffalo Pound Provincial Park, these were solitary nests.

¹ HJERTAAS, D.G. 1984. Colony site selection in Bank Swallows. MSc. Thesis, University of Saskatchewan, Saskatoon.

1984 SASKATCHEWAN CHRISTMAS BIRD AND MAMMAL COUNTS

Count period is from Saturday, 15 December 1984 to Wednesday, 2 January, inclusive. Count area should be a circle 24 km (15 miles) in diameter. Count forms will be sent to compilers who submitted counts for 1983. Anyone else who wishes to send in a count please write for forms to **Mary I. Houston, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8**

Reports of counts should be sent to Mary Houston as soon as possible after they are taken. To be included in the report in the March 1985 Blue Jay they must reach Mary by 10 January at the very latest.

COMMON GRACKLES ANTING WITH MARIGOLD FLOWERS

ROBERT W. NERO, Box 14, 1495 St. James Street, Winnipeg, Manitoba, R3H 0W9, and DAVID R.M. HATCH, 876 Elizabeth Road, Winnipeg, Manitoba. R2J 1A8

"Anting" is a puzzling activity of birds in which a bird treats its feathers with ants or substitute materials. It was first reported by Audubon and has been a matter of interest to ornithologists ever since. The behaviour of anting is stereotyped and involves vigorous movements to apply ants and a wide variety of other items to ventral parts of its body, particularly the underside of the wings and tail.⁴ In a comprehensive report in 1957, Whitaker listed 148 species of birds which had been observed anting.⁵

A recent popular book devotes an entire chapter to anting and "related antics."² Although plant materials, e.g., fruits, fresh walnut husks, foliages, raw onion and gum of grass-tree have been used for anting, there are apparently no published observations of birds anting with flowers.⁵

It is thus with some surprise that we have learned that Common Grackles have evidently been anting with marigold flowers in city yards in Winnipeg for several years. This was first brought to our attention by Cathy Kaminski, who reported that from mid-July to 21 July 1983, she observed some black birds (probably grackles) regularly performing a strange ritual in her backyard. One at a time, each of about six birds flew down by her flowerbed and plucked off a yellow marigold. The birds then vigorously rubbed the flower against its wings and breast, wherever it could reach, until flower petals were torn loose. Then the bird would pluck another flower and repeat the process, going through three or four flowers before flying away. Usually this took place before 8:00 a.m. The bird would go through some peculiar con-

tortions while rubbing the flower into its plumage. Nero visited the Kaminski yard on several occasions after getting this report, but failed to see any birds in the vicinity. Little heaps of yellow petals were seen in various places on the lawn, lending support of Kaminski's report.

Following the publication of a description of Kaminski's observations in a newspaper column, several additional reports of a similar nature were received by telephone and mail from 12 to 15 August, 1983.³ David Bradley wrote: "Early one mid-July morning I looked out my window before six a.m. and noticed about six or eight adult and young grackles pulling apart marigolds. Two or three of them just seemed to scatter the petals around but two or three others made exact moves of putting a beakful of petals under each wing and rubbing them on their breasts. One adult male made two or three such applications."

Mrs. Gerry Zborowsky wrote: "I have had the same trouble for the past couple of years. My neighbors and I thought it was our poodle breaking off all the marigold flowers and tearing them off. I have since found out that it is the 'Grackles' . . . We have had a lot of them around here for the past few years."

Enid and Doug Bond stated: "The birds around here eating the tops off the marigolds are the Common Grackle. Our neighbor, Edna Gowanlock, put in a border of the small marigolds. Doug . . . had watched [grackles] doing their antics with the blossoms. They were still at it this morning. There are a very few flowers left. My other neighbor, Mrs. Doris Wrigley . . . put in marigolds, and was



Common Grackle

Four Winds Prairie Photography

quite annoyed to see the 'Darn Blackbirds' eating all her flowers."

Robert Parsons wrote as follows: "I have seen Common Grackles indulging in the same behaviour [as reported by Mrs. Kaminski] . . . In the summer of 1979 our front flowerbeds were planted with marigolds . . . In the middle of June we began to notice that quite a considerable amount of the marigolds in the flowerbed adjacent to the lawn had lost their flowers. The blossoms were visible at the base of the plants [and were] all pulled apart . . . Presently the other flowerbed began to be attacked as well. We probably would have gone on suspecting rabbits had it not been for my observations one morning . . . Not too long after the sun rose a flock of about 5 or 10 grackles landed in our now defunct weeping birch tree . . . after a minute or two one bird flew down to the lawn and strutted towards the marigolds (the others followed it) and tore off a flower, pecked at it until he had broken it up and began rubbing the petals

through his feathers particularly those on his breast and wings. Presently they were all doing this and began acting as if they were drunk, seemingly unable to balance as they swayed from side to side. Finally, however, they 'recovered' and flew away. At the end of the nesting season, the grackles abandon our area. This is usually at the end of July or beginning of August. At this time the attacks on our marigolds ceased. The following summer we had marigolds in our flowerbeds again, and again they were attacked. I have never seen the grackles at the marigolds since (it's not my favourite time of day!) but I assume that they're responsible. Our marigolds (both years) were not yellow like Mrs. Kaminski's but were two-toned orange and reddish-brown. On one occasion a rose was found in a similar condition. It was immediately adjacent to the marigolds and was a very similar color and we assume a bird mistook it for a marigold, as no other colored roses were attacked . . . This year we have virtually no marigolds . . . and have observed no damage . . . Although one of my next door neighbors has had the same problem; the problem is not terribly widespread and many of our other neighbors have marigolds without problems."

Charles Rebbeck noted: "Around July 23 I found all 30 of our miniature marigolds had been deflowered with the blooms littering the flowerbed . . ." Mrs. Doris Yates reported: "Both myself and my next door neighbor, Mrs. Donna Dickson, have stopped trying to grow these flowers . . . year after year . . . marigolds would just be nicely into full bloom when along would come as many as 20 . . . grackles and within 15 to 20 minutes, all, or most of the flowers would be destroyed. These birds were not seen 'anting' but could have done so as we did not always see them until the damage was done." Again Brenda E.S Brereton noted: "For a number of years now, I have been bothered by grackles pulling off the marigold flowers." And Ann Lan-

caster added: "My neighbor has marigolds in her border that have been beheaded a few times this year by a flock of grackles. I observed them myself on one occasion, picking ferociously and scattering the flowers on the ground." Doris Cortilet reported that grackles had been coming to their yard for years, dissecting marigold flowers to get the centers to feed their young. She said that she "has never seen them apply flowers to their wings." Although this last report suggests a different reason for grackles using marigold flowers, the evidence is strong that anting behaviour is a primary factor causing grackles to seek out these plants.

Marigolds (chiefly genus *Tagetes*) are among a group of flowers that contain pyrethrum, a natural insect repellant. Horticulturists have long been aware that parasitic worms called nematodes disappear from the soil in which marigolds have grown.¹ Mrs. Doris Cortilet added that she "grew marigolds to protect tomatoes and other vegetables from insects." And David Bradley added that: "Having read previously in a book about gardening secrets that marigolds contain a natural pyrethrum I thought that these [grackles anting with marigolds] were very smart birds. I thought that perhaps the marigold odor or oil might discourage lice or other parasites."

The above astute comment is close to what ornithologists have concluded is one possible basis for anting behaviour. Some forms of marigolds have a strong odor — others lack any odor, but since most birds have a poor sense of smell, this is probably not the stimulus source. Marigold petals, as noted by Nero when visiting Kaminski's yard, have a strong, bitter flavour, and it is more likely that this is the stimulus source releasing the anting behavior. That Common Grackles respond to strongly-flavoured substances has been reported in the literature. In Milwaukee, a flock of about 20 grackles was seen coming daily to a vegetable garden. "It was discovered that the birds

were anting with partly evaporated mothballs put out to discourage rabbits."²

We would like to thank Jean Bancroft for drawing our attention to the book by J.V. Dennis, and thank all of the informants for sharing their observations.

¹ CROCKETT, J.V. 1971. *Annuals*. Time-Life Books, New York. 176 pp.

² DENNIS, J.V. 1981. *Beyond the bird feeder: the habits and behavior of feeding station birds when they are not at your feeder*. Alfred A. Knopf, New York. 244 pp.

³ HATCH, D. 1983. "Chickadee Notes", *Winnipeg Free Press*, August 12, 1983.

⁴ WELTY, J.C. 1962. *The life of birds*. W.B. Saunders Co., Philadelphia. 546 pp.

⁵ WHITAKER, L.M. 1957. A resume of anting, with behavior reference to a captive Orchard Oriole. *Wilson Bull.* 69:195-262.



Young Ferruginous Hawks

Gary W. Seib

RECENT SUCCESSFUL NESTING OF FERRUGINOUS HAWK IN MANITOBA

BRIAN D. RATCLIFF, Box 1551, Stouffville, Ontario, L0H 1L0 and
JOHN L. MURRAY, Lyleton, Manitoba. R0M 1G0

On 4 July 1917, Talbot Criddle photographed a Ferruginous Hawk nest with nestlings near the family farm at Aweme, Manitoba (Fig. 1). Little did anyone know that it would be the last Ferruginous Hawk nest photographed in Manitoba until 1984. Hales reported this species nesting along the Assiniboine and Souris rivers in 1927;² these were the most recently documented nests. This species has never been a common nesting bird in the province, and in Saskatchewan in recent years it has been decreasing.⁴ An historical review of the occurrence of this hawk in Manitoba was compiled by Bechard.¹ New nest records presented by Bechard were based on sets of eggs in the collections of the Western Foundation of Vertebrate Zoology and the American Museum of Natural History. These egg clutches were collected as follows: one by C.P. Forge, 10 June 1907 near Roseisle; four by J.D. Currie, 10 May 1908 from nests in the extreme southwest; two by D. Ogg, 20 May 1923 and 2 May 1924 from nests near Pierson. A survey of birds in southwestern Manitoba from 1974-78 by Knapton failed to find any active Ferruginous nests.⁵ It was assumed by Bechard that the species was no longer breeding in the province.¹

On 2 July, the junior author and his wife Joan noticed two large buteos dive-bombing two coyotes in a pasture 10 km west of Lyleton. With a spotting scope they identified the birds as Ferruginous Hawks. A scan of the pasture revealed a nest with young in a lone Trembling Aspen tree. While they were watching the nest, one adult Ferruginous Hawk came into view and landed at the nest. A return visit on 4 July disclosed that



Ferruginous Hawk *Brian D. Ratcliff*

there were two young at the nest. Between 8 July and 17 July, verification of the occupancy of the nest by Ferruginous Hawks was made by Dennis Fast, Jerry Greenly, William J. Walley, Ralph J. Wang and ourselves. During this period the nest was photographed several times. On 17 July, Walley found and photographed three well-feathered young in the nest. Where this additional bird came from is not clear, but it could have fledged early and been on the ground during earlier visits. All three young had fledged by 19 July. An addled egg (60.65 mm×48.05 mm) collected from the nest 23 July was delivered to Herb

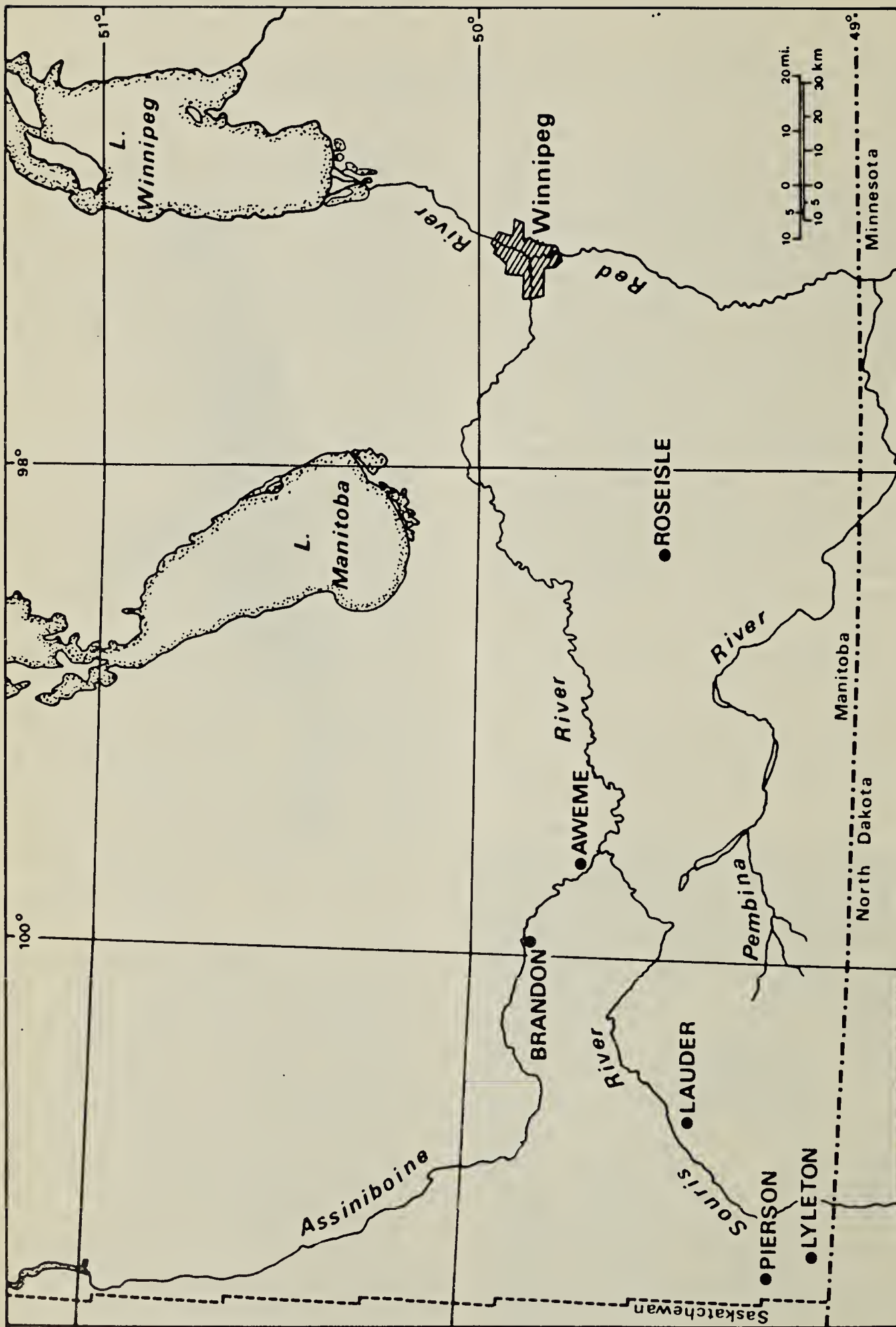


Figure 1. Map of extreme southwestern Manitoba showing place names mentioned in the text.



Site of Ferruginous Hawk nest

Brian D. Ratcliff

Copland, Manitoba Museum of Man and Nature.

The nest was 4.6 m above the ground in a 6.1 m aspen tree. The tree was located in the centre of a 260 ha pasture. The nearest trees were in a bluff 200 m south; in this bluff was a Swainson's Hawk nest with three young. Another Swainson's Hawk successfully nested in the same pasture 300 m west of the Ferruginous Hawk nest.

A second pair of Ferruginous Hawks was observed building a nest on 15 April, 5 km west of Lyleton. The pair was observed copulating and often the female sat on the nest. Observations of the pair were made at the nest site on 16, 22 and 27 April. A major snow storm hit southwestern Manitoba on 28 April and approximately 25 cm of snow was recorded in the Lyleton area. After the storm, the nest was checked daily with a spotting scope and only one bird was seen near the nest on 2, 3, 13, 23, and 30 May. We walked to the nest tree on 27 June and found egg shell fragments in the nest. The egg shells were buried under a layer of cow dung, twigs and sod, materials characteristically brought to the nests by Ferruginous Hawks. A search for the pair

turned up two birds in a pasture 3 km south of the abandoned nest site.

In a pasture 6 km south of Lauder, six Ferruginous Hawks were observed perched on fence posts 17 July. Single birds were seen in the area 16 May, 1 June, 10 and 16 July. It appeared to be a family unit but a search of local pastures produced no nest.

We recorded 11 sightings of Ferruginous Hawks in southwestern Manitoba in 1983 and seven sightings in 1984 in addition to the above mentioned birds. Calvin Cuthbert reported spotting an unusual pair of Ferruginous Hawks in late May 1984, east of Pipestone. One of the birds was a dark phase and the other was the usual light phase.

Management practices by Houston in Saskatchewan and Shumutz in Alberta have proved very successful.^{3 6} They placed nest structures on top of 4 m telephone poles in pastures where trees were lacking. The hawks readily occupied these sites. There appears to be plenty of potential nesting trees in Manitoba, but a pilot project to set up some poles in large pastures along the Souris River may prove beneficial. This proposal is being



Young Ferruginous Hawks

William J. Walley

considered by the Department of Natural Resources.

We feel that the species has been overlooked in the past and quite probably has been nesting here in limited numbers. Since this hawk became designated as a threatened species by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), more people are starting to look closely at all raptors in attempts to sight Ferruginous Hawks. It is this interest by local birders that led to the discovery of the first recorded Manitoba nesting of the Ferruginous Hawk in 57 years.

We wish to thank the World Wildlife Fund (Canada) and the Manitoba Department of Natural Resources Wildlife Branch for their support of the Manitoba Burrowing Owl Survey. These Ferruginous Hawk sightings were made while conducting this survey. Horst Schell kindly prepared the figure. Thanks also to Robert W. Nero for his constructive

review of this report.

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- ² HALES, B.J. 1927. *Prairie birds*. MacMillan, Toronto.
- ³ HOUSTON, C.S. 1982. Artificial nesting platforms for Ferruginous Hawks. *Blue Jay* 40:208-213.
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MALE RUFF DISPLAYS TO THREE FEMALES NEAR CHURCHILL, MANITOBA

JOHN D. REYNOLDS, Department of Biology, Queen's University, Kingston, Ontario. K7L 3N6

The Ruff breeds in northern Europe and Asia from the British Isles to Southeastern Siberia.¹ In North America this shorebird is a scarce but regular spring and fall migrant. Its pattern of regular occurrence has prompted speculation by many that Ruffs may breed on this continent.⁵ Confirmation was obtained in 1976 when Gibson³ discovered a nest containing four eggs in Alaska. [This isolated nesting remains the only breeding record of the Ruff in the New World.]

On 26 June 1983, Susan Alton and I observed a male Ruff in nuptial plumage briefly displaying to three females in northern Manitoba. The sighting was on the southeast side of Norton Lake, 3 km

west of the Queen's University Tundra Biology Station at La Pérouse Bay, 40 km east of Churchill (58°24 N, 94°24 W). The birds appeared quite suddenly, flying low over the tundra in a tight cluster. The females were in the lead, the male behind. They landed for about 10 seconds 30 m from us. The male ran approximately 2 m in a hunched, almost horizontal posture, toward the females. This posture was similar to the "half-squat" described by van Rhijn.⁸ He then stopped, drew upright for about one second (apparently the "tiptoe"⁸ posture), and tilted his head and neck forward so that his body was horizontal. He erected his white "ruff" (collar) and confronted the females for about 3 to 5 seconds. Then



Figure 1. *Ruff* habitat, Norton Lake, Manitoba

J.D. Reynolds

all four suddenly flew south, the females again in the lead, until they were out of sight.

The combination of the brevity of the sighting, and our state of shock at the time, make the following description less detailed than we would have liked. The male was dark blackish-orange on the lower back and head, with a spectacular white ruff, and white ear tufts. His bill and forehead were a very prominent orange. The females were smaller than the male, approximately the same size as Pectoral Sandpipers, although they had a more "drawn out" appearance. The upper breast had an even, buffy wash; not the fine streaking of Pectorals. The brownish colouration gave way gradually to white beneath; not cut off distinctly as in Pectorals. The upper-parts were tan and the back had a "scaly" appearance. The medium-length bill and longish legs appeared to be dark.

The habitat (Figure 1) consisted of raised hummocks dominated by Dwarf Willow (*Salix brachycarpa*), reindeer moss (*Cladonia* spp.), Alpine Bearberry (*Arcotostaphylos alpina*), and sedges (*Carex aquatilis* and others). There were also a few clumps of stunted Black Spruce (*Picea mariana*), and some scattered Dwarf Birch (*Betula glandulosa*) and Mountain Avens (*Dryas integrifolia*). Due to a late spring melt and proximity to Norton Lake, which was about 300 m away, most of the area was flooded, with only ridges and hummocks dry.

The area was not visited again during the following week. However, on 2 July, six days after our sighting, Ray Alisauskas and Terry Quinney observed a similarly-plumaged male about 5 km to the north. The bird was seen only briefly from a moving track vehicle 60 m away. It bent its head low to the ground and erected its white ruff as in the half-squat posture noted on 26 June, and was accompanied by two or three drably plumaged shorebirds which may have been females. The habitat was somewhat drier than the Nor-

ton Lake area and we judged it to be more suitable for nesting. On 8 July we searched this general area but were unsuccessful in locating any adults.

There are four previous records of Ruffs in Manitoba; three of these are from Churchill. An adult of undetermined sex was seen there on 23 June 1970⁶, an adult male was photographed there from 23 to 24 June 1974 and a subadult male was photographed there on 17 June 1978 (T. Burke, T. Dabis, m ob; R. Koes, pers. comm.). The remaining Manitoba record was of an adult male at Oak Hammock Marsh in southern Manitoba. It was present from 1 to 6 May 1983, photographed by P. Taylor and seen by many others (R. Koes, pers. comm.).

The dates of occurrence of Ruffs in the Churchill area coincide with the average time of early incubation for most of the local species of shorebirds. Habitat which appears to be suitable for breeding is abundant in the Churchill area and, indeed, throughout much of the low arctic. The birds seen in 1983 could have been migrants travelling further north. However, the observations of breeding display and sightings six days apart during the local shorebird breeding season, suggest against this. The birds may have been nonbreeders, simply "going through the motions". Ruffs are well known for their elaborate leks, where males of various status and plumages compete for females on small courtship territories. The plumage and postures of the male in the Norton Lake area were typical of "satellite" males which do not defend territories themselves, but use territories of dark-tufted "residents" males.^{4 8} In general, this highly structured social system may hinder breeding in new areas. However, the mating system may be more flexible in areas where adults occur in low density.

If Ruffs do indeed breed in the eastern low arctic, the main difficulty in confirming it will be the vast area of virtually unexplored but apparently suitable habitat.

This concept was illustrated well by the 1980 nestings of the rare Ross' Gull,² which could easily have been overlooked had the birds not chosen nesting sites within one kilometre of the main road in Churchill. With increased coverage of the Churchill area, it will be interesting to see whether concrete evidence of breeding by Ruffs is obtained.

Acknowledgements

These observations were made during a study of Red-necked Phalarope ecology, funded by the Canadian Wildlife Service, a Canadian Department of Indian and Northern Affairs Training Grant, and Queen's University. I thank Susan Alton, Terry Quinney and Ray Alisauskas for their descriptions of the Ruffs. Rudolph Koes kindly provided records of Ruffs in Manitoba, and Kathy Martin and Doug McRae provided helpful comments on the manuscript.

¹ AMERICAN ORNITHOLOGISTS' UNION. 1983. Check-list of North American

Birds. Sixth edition. Washington, D.C.

² CHARTIER, B. and F. COOKE. 1980. Ross' Gulls (*Rhodostethia rosea*) nesting at Churchill, Manitoba, Canada. Amer. Birds 34:839-841.

³ GIBSON, D.D. 1977. First North American nest and eggs of the Ruff. Western Birds 8:25-26.

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⁶ PITTAWAY, R. and R.W. NERO. 1971. Recent bird notes of interest for Churchill, Manitoba. Blue Jay 29(2):60-63.

⁷ RIBBLE, B.A. 1975. Ruff in Churchill, Manitoba. Blue Jay 33(3):178-179.

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LONG-TAILED JAEGER IN SOUTHERN MANITOBA

GRAHAM J. CRAWSHAW*, Metropolitan Toronto Zoo, P.O. Box 280 West Hill, Ontario. M1E 4R5

The Long-tailed Jaeger is one of three species of jaegers, as the skuas of North America are known. Related to gulls and terns and best known for their predatory feeding habits, jaegers have circumpolar distribution, breeding in the Arctic and wintering in the southern hemisphere. A fourth skua species, the Great Skua, is principally found in Antarctica and the sub-antarctic islands with a separate population in the eastern North Atlantic.

The Parasitic Jaeger or Arctic Skua is the commonest of the jaegers in Manitoba and occurs in two colour phases. Light phased birds have white bodies and brown wings while dark phased birds are uniformly greyish brown. The Pomarine Jaeger is the largest of the three species and is also found in the two colour phases. The Long-tailed Jaeger, which is the smallest of the three and found almost exclusively

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in the light phase, is characterized by two finely pointed feathers which extend up to 20 cm beyond the remainder of the tail.¹

Jaegers, particularly the Parasitic, often feed by chasing gulls and terns, forcing them to regurgitate food. The Pomarine and Long-tailed Jaegers rely more heavily on rodents, principally lemmings, but will also take small birds, eggs, invertebrates and carrion.⁷

The jaegers of Manitoba and northern Canada migrate annually to the tropics and may penetrate deep into the southern hemisphere along ocean routes. The Long-tailed Jaeger is considered the most pelagic of the three species and is very rarely seen from coastlines.¹

In Manitoba the Long-tailed Jaeger is a migrant and in the north of the province occurs irregularly in varying numbers in spring, mostly during the first two weeks of June. Dates of spring sightings in the Churchill region range from 26 May to 6 July. There is one fall record from this area on 11 September.²

Godfrey reported that the species breeds on the Hudson Bay coast approximately 160 km north of Churchill.¹

Elsewhere in the province the Long-tailed Jaeger is rarely seen and its migration route is not known. There is speculation that this species may make at least part of its migration across land at high altitudes.² Johnson encountered a flock of up to 29 near Thompson between 13 June and 27 June 1969 following a late snow storm.³

One bird was reported at Clandeboyne in October 1902; another was shot at Aweme on 17 May 1903 and others reported on 10 May 1940 near Pine Falls and possibly near Winnipeg on 6 May 1980.^{6 5 4}

On 14 June 1982 a single bird was seen on the shore at Leaside Beach approximately 240 km north of Winnipeg on the western side of Lake Winnipeg between Pine Dock and Matheson Island. The bird showed little tendency to fly away and later that day was chased by a dog into the water from where it was



Long-tailed Jaeger following capture

Lori Penarsky

retrieved by boat by Gordon Penarsky of Winnipeg. The following day the bird was taken to the animal hospital of the Assiniboine Park Zoo where it was examined.

The jaeger was in very poor body condition but exhibited no evidence of injury or feather damage. A diagnosis of starvation and exhaustion was made. During the early period of captivity the jaeger was alert by extremely calm and showed little fear of humans. It walked calmly from one cage to another for cleaning. As the bird regained strength, it became increasingly nervous and would become agitated when approached, often uttering a high pitched squeal of alarm. When stressed it would also consistently regurgitate food that had been eaten recently although on most occasions it would reconsume the meal later. The diet consisted of that fed other carnivorous birds in the zoo — pieces of horsemeat, day-old chicks, smelts and mice. The jaeger showed a marked preference for the latter, consuming adult dead mice as well as small live ones. Its appetite was poor but the bird gradually gained strength and weight. Following transfer to a larger cage, the jaeger became even more nervous and would fly vigorously around the room if anyone came too close.

It enjoyed water and would regularly bathe in a small pond until its feathers were completely wet. Since it was considered that the jaeger would have a very poor chance of survival if released, the bird was transferred to an exhibit within the zoo, containing other native birds and as of 16 July 1984 is still on public display at the Assiniboine Park Zoo in Winnipeg. It is probably the only one of its species in captivity anywhere.

Acknowledgements

The author wishes to thank Herb Copland of the Manitoba Museum of Man and Nature for providing information on jaegers in Manitoba and for reviewing the manuscript. Lori and Gordon Penarsky kindly provided photographs and details of the jaeger's rescue.

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Long-tailed Jaeger at Assiniboine Park Zoo
G.J. Crawshaw

THE FIRST NESTING COMMON POORWILL IN SASKATCHEWAN

HEIDI SUTHERLAND, 1305 Aveune D North, Saskatoon, Saskatchewan. S7L 1P2

On 27 June 1983, Rick Zapf, the Cypress Hills Provincial Park Interpreter, and I were hiking in the West Block of the Cypress Hills. We were in rather open spruce habitat and as we rounded a knoll near the Mysterious Rock Pile a grey-brown bird flopped into the air directly in front of me. It was so well camouflaged that my next step would have been dangerously close to it.

Needless to say I was startled, but did catch a fleeting glimpse as it disappeared behind a large spruce tree. I noticed it was a fairly heavy set bird with moth-like flight. It left two white eggs in a barely detectable nest directly on the ground.

Rick and I examined the nest, then waited on an adjacent knoll by the Mysterious Rock Pile for about an hour in hope that the bird would return to the nest. We carefully and slowly returned to the site but to our disappointment the bird had not returned. It was nearing dark and we had about an hour hike back to our vehicle, so we left.

Later when looking through bird books I mentioned to Rick I thought we had seen a poorwill. I tossed this over in my mind for several days. Then on 29 June I casually mentioned it at work at the Prairie Wildlife Interpretation Centre to Jon Triffo, our avid birder and wildlife photographer.



Common Poorwill by eggs

Jon Triffo



Common Poorwill

Jon Triffo

He became immediately interested and twenty minutes later, after identifying the eggs from a page of pictures he and I were on our way to the Cypress Hills.

We picked up Rick and headed over to the West Block. A typically vigorous "Cypress Hills Thunderstorm" was in the brewing. So a race against time ensued to get to the nest before the rain. Fortunately a security officer gave us a ride part way from the public parking lot at Fort Walsh. The journey was not without additional event. A large cow moose allowed us several good photos.

We hiked vigorously, the sky darkening at the same rate. Both Rick and I remembered the location of the nest, but the bird's superb camouflage made it hard to spot. Rick picked it out first. The three of us slowly crept up and got a good look at the bird and yes indeed, it was a Common Poorwill! It was not flushed, but fluttered several inches from the eggs, allowing the photo you see here to be taken. The poorwill was hissing at us dur-

ing our observations and photographs, but remained perfectly still except for the eyelids which periodically closed. We were within three feet of the nest.

The sky was virtually black by this time. Rick and I had neither flash nor tripod, but Jon got several excellent photos with his flash.

We hurried away so that the bird would return to the eggs before the rain came. We made it just in time. Several minutes later the three of us were drenched but ecstatic. The first nesting poorwill had been recorded in Saskatchewan.

Rick visited the nest a week later to check on the bird and photograph it. The poorwill exhibited the same behaviour, hissing and closing its eyes, but this time it stayed right on the nest.

Special thanks go to Jon Triffo and Rick Zapf and to the managers and staff of the Prairie Wildlife Interpretation Centre for allowing the trip to take the photographs.

THOMAS EDMUND RANDALL, NEST-FINDER SUPREME*

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan, S7N 0J8, MARC J. BECHARD, Department of Biology, Boise State University, Boise, Idaho, 83725 and PHILIP H.R. STEPNEY, Provincial Museum of Alberta, 12845 102nd Avenue, Edmonton, Alberta. T5N 0M6

Tom Randall was one of the coterie of 16 men and 1 boy who banded ducks for Ducks Unlimited in western Canada from 1943 to 1945 [That boy is senior author of this paper].² Randall's most significant Saskatchewan contributions were made at Kazan Lake, west of Ile-à-la-Crosse, in 1942.²² Although the terrain was such that he banded only 285 ducks, at Kazan Lake he identified 153 species of birds, found nests of 104 species, flightless young of 2 more species and empty nests of another 2 species. Of 557 duck nests located there, 243 were of the Lesser Scaup. Important nest records for this otherwise unstudied area included those of the Black-and-White Warbler, a first for the province, as well as the Yellow-bellied Flycatcher, Philadelphia Vireo, and Magnolia, Blackpoll and Palm Warblers. Robert W. Nero deserves credit for having persuaded Randall to publish this important material in the *Blue Jay*.^{8 22}

At that time Randall provided a brief autobiography, the first portion of which was as follows:

"I was born June 21, 1886, at Rodmersham Green, Kent, England. My first ten years were spent around the orchards, fields and woods. Early in life I got interested in the beauties of nature, especially the birds, and I soon acquired the ability to recognize the many species I met with. While quite young I saw such rarities as four Waxwings in an apple tree and a pair of Golden Orioles in a plantation of larches. Just before my eleventh

birthday my parents moved to the district bordering the Thames River estuary [Clinch Street, near High Halstow] and here I soon became acquainted with the bird life of the extensive marshes along the estuary. I soon came to know the gamekeepers and marsh shepherds and was allowed to ramble through woods, fields and marsh with perfect freedom. I observed many comparatively rare birds, found large numbers of nests and acquired a thorough knowledge of the bird life of the district . . ."²²

Randall came to Canada in 1912, to farm 4 miles southwest of Drinkwater, Saskatchewan. His best sighting there was a Gyrfalcon on 12 December 1912.²³ When the war broke out, he joined the Army and served in Europe. Wounded in action at Vimy Ridge, he returned to Canada in September, 1919, settling on a farm 13 miles southwest of Castor, Alberta, aided by the soldier settlement scheme. He married Ruth Ross on 3 September 1926. His daughter, Barbara, reports that he was not cut out to be a farmer. However, farm life did allow Randall to indulge in his hobby of ornithology. He wrote a column, "Weekly Observations" in *The Brooks Bulletin* and he contributed 9 notes to *The Oologist's Record*, published in England, concerning nest finds near Castor. He was visited at least once by Professor William Rowan, and over the years made some noteworthy observations for the area, including Lazuli Bunting, Varied Thrush, Lewis' Woodpecker,

* Fourth in a series on oologists of the Northern Great Plains



Bonaparte's Gull on nest

Chris Adam

Pine Warbler,⁹ and nesting Lark Buntings.¹²

In 1927 Randall spent several weeks with A.D. Henderson at Belvedere, Alberta, in the swampy, mixed-woods region northwest of Edmonton.⁸ When Randall wrote of their exciting finds together, his address was now Camrose, Alberta.¹⁰ Whether Randall had developed a taste for northern bush and muskegs or whether his move was predicated by his wife's opportunity to teach there, the two of them next moved on 4 April, 1928, to Athabasca, north of Edmonton.

This area offered great opportunities for an oologist. That June, on exploring a shallow, 40-acre "lake," he found four nests of the Short-billed Dowitcher¹⁶ and on a mile-long lake 25 miles south of Athabasca he found an incredible 19 nests of the Bonaparte's Gull.²⁰ That year he was visited by Dr. Harry C. Oberholser of the United States Fish and Wildlife Service. In late January, 1929, the Randalls moved east to Donatville, Alberta, 12 miles north of Boyle, where Mrs. Randall taught school for six years. Here he found his first, almost-completed nest

of the Gray Jay on 10 February and by spring he had found 19 nests of this species that, like the Great Horned Owl, nests while there is still snow on the ground.¹¹ More experienced, he found 43 Gray Jay nests, 23 with eggs, in 1930.¹¹ On 8 June, 1931, Randall located a set of 4 eggs of the Spotted Sandpiper near a lake at Rochester, west of Boyle. On 12 May, 1933, Randall located a set of 5 eggs of the Rusty Blackbird near Donatville, and later on 27 May, he located a nest of Bonaparte's Gull at Grassland, 10 km northeast of Donatville. These three sets now reside in the collection of the Provincial Museum of Alberta.

The concentration of birds Randall encountered south of Athabasca was quite extraordinary. On one 320-acre upland location in 1931 he found a total of 130 occupied nests after 15 June, a time when many broods had already fledged.¹³

Early in 1936 (letters of 30 April), Professor William Rowan wrote to P.A. Taverner and Hoyes Lloyd, telling them of the superb qualifications of Randall for

a position as a museum field assistant or as a park warden. Rowan's letters were successful, for in May and June, Randall accompanied P.A. Taverner and Ronald Smith to Manitoba, collecting along the Hudson Bay railroad about 100 miles southwest of Churchill.⁵ There Randall collected 50 egg sets from species such as Lesser Yellowlegs, Merlin and Blackpoll Warbler. He found no less than 23 nests of the Harris' Sparrow,²² a species whose eggs had first been found near Churchill in 1931; ten sets were collected for the National Museum of Canada and one infers that an additional nine sets were taken by Randall for sale or trade.⁵

In 1937 Randall became a warden at Elk Island National Park east of Edmonton and began a series of monthly reports, some of which are still extant. In April, 1937, he documented 80 species of birds in the park, including a Mew Gull, and located 25 active nests of the Red-tailed Hawk in the north half of the Park alone.

Searching the islands and shorelines of Astotin Lake, he located 56 Mallard, 5 Bufflehead and 6 Canvasback nests. Noting much predation of duck nests by crows, he destroyed 54 crow eggs, 13 young, and 7 adult crows. During May he also found 7 nests of the Lesser Yellowlegs, 3 of the Common Loon and 7 of the Great Blue Heron. He also found nests of the Red-necked, Horned, Eared, and Pied-billed Grebes, Sora, Wilson's Phalarope, 12 nests of the Connecticut Warbler, 6 of the Gray Jay, 4 of the Olive-sided Flycatcher, and 1 of the Rusty Blackbird. Randall added 62 species to the park checklist in May alone.

In June 1937, Randall, banded 198 Red-winged Blackbirds, 2 Bronzed Grackles, 2 Brown-headed Cowbirds, 3 American Robins, 3 Killdeers, 3 Red-tailed Hawks, 1 Downy Woodpecker, 3 Wilson's Phalaropes, 3 Northern Flickers and 5 Richardson's Merlins.

In July he banded another 99 birds before his supply of bands was used up. He also destroyed another 69 crows, estimating that they had consumed eggs from 30% of the duck nests on the island of Astotin Lake. That year he compiled an annotated checklist of the birds of Elk Island Park.

No report for 1938 exists, but his 1939 report indicated that waterfowl numbers in 1938 were comparable to those of the previous year. The Redhead, however, showed a decided increase. Randall found a Bonaparte's Gull nest in the park in 1938, the second of only two locations known to him south of the North Saskatchewan River. In 1938, 676 birds of 50 species were banded, of which 284 were waterfowl.

In 1939 his efforts at finding nests on Astotin Lake were curtailed by not having access to a boat. A tireless walker (Edgar T. Jones, pers. comm.), Randall located 236 nests of Mallard, Northern Pintail, American Wigeon, Green-winged Teal, Bufflehead and Common Goldeneye along the shore of Astotin Lake. Randall also located a second nest of Bonaparte's Gull.

Although Soper reported a nesting of the Surf Scoter in the park²⁴ based apparently upon Randall's observations, Randall's reports note this species only as a rare migrant. However, Randall did locate nests of typical northern species, including Common Loon, Lesser Yellowlegs, Olive-sided Flycatcher, Gray Jay, Boreal Chickadee, Palm Warbler and Rusty Blackbird, whose range extended south into the areas of boreal forest located within the park.

In 1939, the Randalls moved to Tofield, a short distance from Beaverhill Lake, where he found 28 Marbled Godwit nests in 1940.

When the war broke out, Randall tried to enlist in the Army but was turned down because of his age. He then began work-



Ducklings in nest

Unknown

ing for Ducks Unlimited, and in 1940 placed bands on 1,694 ducks at Ministik Lake near Tofield and the next year banded another 476 ducks there before moving to the home of the Trumpeter Swan at Swan Lake on the British Columbia boundary near Tupper, B.C.² In 1942 he spent some time at Mortlach, Saskatchewan, where he found 28 Willet nests²⁰ before moving north to Kazan Lake. In 1943 he banded 165 ducks at Many Island Lake, Alberta, before moving to the Brooks area, where he made the first observation and found the first nest of the Virginia Rail in Alberta, on 6 June.¹⁵

In 1944 Randall located many waterfowl nests near Brooks, Alberta, recording dates for each. He found 63 Mallard nests, with a peak nesting period between late May and early June; 107 Northern Pintail nests showed a late April to mid-May peak in laying and a second minor peak of re-nestings in early to late June; 46 Gadwall nests demonstrated a peak laying period from early to late June; 107

Northern Shoveler nests were mostly between early and late June; 34 Blue-winged Teal nests had a peak laying period around mid-June, and 66 Lesser Scaup nests were from mid to late June. Randall also located 2 nests of the Cinnamon Teal, 15 of the Redhead, 4 of the Canvasback and 3 of the Ruddy Duck. That year Randall also collected one set each of Willet, American Avocet, Wilson's Phalarope and Black-billed Magpie eggs. He also banded 1,835 ducks.

In 1945 Randall recorded in the Brooks area an additional 102 Mallard, 111 Gadwall, 28 American Wigeon, 4 Green-winged Teal, 101 Blue-winged Teal, 40 Shoveler, 159 Northern Pintail, 22 Redhead, 8 Canvasback, 173 Lesser Scaup, 1 White-winged Scoter, 6 Ruddy Duck and 7 Canada Goose nests. In total, these nests contained 6,168 eggs. He also collected eggs of the following species: Eared Grebe, American White Pelican, White-winged Scoter, Canvas-



American Avocets

Gary W. Seib

back, Gadwall, Green-winged Teal, California Gull, Ring-billed Gull, Say's Phoebe, Horned Lark, Barn Swallow, Loggerhead Shrike, Chestnut-collared Longspur and Black-billed Magpie. The two species of gulls were in a large mixed colony and the nests of the Say's Phoebe and Barn Swallow were located in concrete culverts. In the same year Randall collected one set of Northern Shoveler eggs and one Canada Goose clutch.

In May, June and July, 1945, while working at the Ducks Unlimited Project dubbed the "Louisiana Lakes", Randall banded 1,573 ducks and also kept records of waterfowl nests parasitized by other species. He located 2 Mallard nests containing Ring-necked Pheasant eggs and 7 other containing up to 6 Redhead eggs. He located one American Wigeon nest containing 2 Lesser Scaup eggs. He discovered three parasitized nests of the Northern Shoveler, 2 by the Redhead and 1 by a Lesser Scaup. Two Northern Pintail nests were located, containing 1 and 2 Redhead eggs. He discovered 5 Gadwall nests parasitized by Redhead and 3 parasitized by Lesser Scaup. A Gadwall nest contained 3 Lesser Scaup eggs and 2 Redhead eggs, in addition to 8 of its

own. The Lesser Scaup was the most heavily parasitized species with 16 nests parasitized by Redhead, 1 by Ring-necked Pheasant and 2 by Ruddy Duck. One Blue-winged Teal nest had been parasitized by a Redhead and another by a Lesser Scaup.

From 1946 until retirement in 1951, at the age of 65, Randall then worked for the Eastern Irrigation District, Alberta Department of Agriculture.

In 1950 Randall collected eggs of the American Bittern, Redhead, Blue-winged Teal, Burrowing Owl and McCown's Longspur at Brooks. In total, 25 sets of eggs of 24 species, collected by Randall in the Brooks area, are in the collection of the Provincial Museum of Alberta.

Randall would spend the winters wherever his wife was teaching, including Dickson and Rocky Mountain House, Alberta. After leaving Brooks, he spent a few years running the pool hall in Banff, then moved to Edmonton to live with his daughter Valerie. Here, as a result of the death of Professor William Rowan, who had promised to write certain shorebird accounts for David A. Bannerman's encyclopedic multi-volume works *Birds of*

the British Isles, Randall wrote some of the most interesting accounts of his life.¹⁶⁻²¹ These are unknown to most North Americans and consequently were not listed in *A Bibliography of Alberta Ornithology* in 1981.⁷ Bannerman's preface to his 9th volume tells the story:

"The sudden and tragic death in June 1957 of my esteemed friend William Rowan of Edmonton, formerly Professor of Zoology at the University of Alberta, deprived this and the next volume of several essays from his scholarly pen which he had agreed to undertake. His loss to Ornithology was grievous, as those who remember his articles in *British Birds* (vol. XX) on Canadian waders will readily agree. My thanks go to his friend Tom Randall of Edmonton — an Englishman by birth — who used to accompany Rowan on many of his expeditions, for filling the breach at short notice. Mr. Randall has contributed notes to this volume on the distribution and breeding habits of the dowitcher and of Wilson's Phalarope and will be responsible for further contributions in volume X."¹

In Volume 10, Randall wrote accounts of the Lesser and Greater Yellowlegs,^{18, 19} in volume 11 for Bonaparte's Gull²⁰ and in volume 12 for the Sora.²¹ Mrs. Barbara M. Jensen, Randall's daughter, kindly loaned the senior author typescripts of the manuscripts her father submitted to Bannerman and these have been compared with the printed versions. Randall wrote so well that virtually no editorial changes were made.

Randall had more experience with the nesting habits of some species than anyone else in the world, before or since. Imagine having access to personal field notes with details of over 1000 nests of Wilson's phalarope,¹⁷ 43 nests of the Short-billed Dowitcher,¹⁶ over 40 nests of the Greater Yellowlegs,¹⁹ and over 50 nests of the Gray Jay!¹¹ Randall collected egg sets at only a fraction of the nests he found and was a virtual one man Nest Records Scheme. It is a pity that his field

notebooks are no longer extant. Fortunately, some of his interesting finds have been recorded, in addition to the four Bannerman volumes, in three regional birds lists, in one short note in *Oologist*, nine in *Oologists' Record*, two in *Blue Jay* and nine in *The Canadian Field-Naturalist*. A few of Randall's observations from the Kent marshes were published in *Countryside* between 1907 and 1909, and a letter appeared in *Field* on 22 September 1955. His youthful reminiscences were summarized in the 1957 Kent Bird Report.^{3, 4}

Randall managed his son-in-law's property in Kootenay Lake, British Columbia from 1962 to 1969, then retired to live with his daughter, Barbara, in Brooks, Alberta. Randall died on 20 December 1974 in Colonel Belcher Hospital, Calgary, after a long illness. He is survived by two daughters, Mrs. Barbara Jensen of Calgary, Mrs. Valerie Cowie of Toronto and a son, Tom, of Calgary.

Acknowledgments:

We are grateful to Mrs. Barbara M. Jensen and Mrs. Valerie Cowie for original drafts of some of their father's articles, typed by Valerie, and for information about their father. Jack Cranmer-Byng provided information about Randall's 1936 employment with P.A. Taverner, copies of the letters from William Rowan, and copies of two Kent Bird Reports. We are particularly indebted to Edgar T. Jones of Edmonton, who donated to the Provincial Museum of Alberta the original records of his good friend, Thomas E. Randall, covering his activities as Park Warden at Elk Island National Park, and with Ducks Unlimited at Brooks, Alberta.

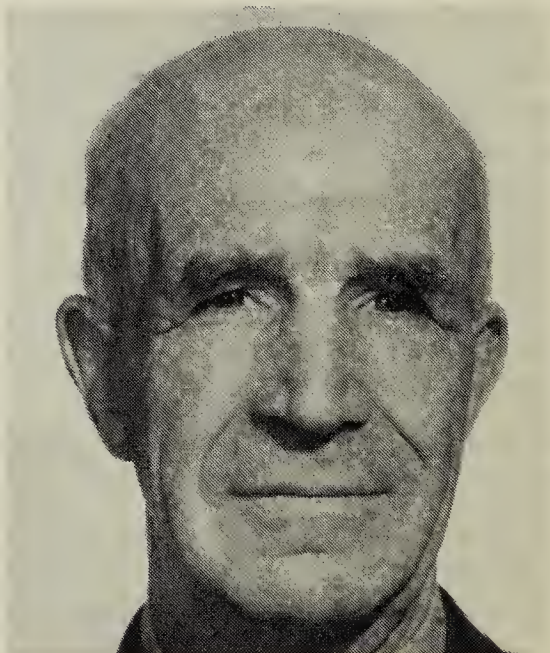
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T.E. Randall

THE BIRD THAT NEVER WAS

VICTOR C. FRIESEN, P.O. Box 65, Rosthern, Saskatchewan. S0K 3R0

I wish to record a bird sighting that I made many years ago — in mid-July of 1947 — when my cousin and I were camping at the South Saskatchewan River. I was 14 years old then, and I am sure of the time because I had taken some snapshots of our outing and dated the pictures. The sighting occurred at Gabriel's Crossing, east of Rosthern.

I write of the incident now with some trepidation, knowing that I am putting my credibility on the line. I do so after publishing some ten articles previously in *Blue Jay* and having just this year published a book by a university press on the American naturalist Henry Thoreau. Perhaps this article may be considered a kind of companion piece to one which appeared in this journal two years ago about another bird that "wasn't".⁴

At the time I had no field guide to help me in identifying the bird, but the colour patterns were so simple and so striking that there could be no quandary about them. I had got up early that morning and was beginning to prepare breakfast outside the tent. Then a strange bird alighted on a branch poking into the natural clearing in which the tent was pitched. (Our camp was on a "bench" above the west shoreline, surrounded for the most part by willow, with some balsam poplar and white birch.)

The bird was in plain view no more than 3 m from me. The sun, although hidden by clouds, was behind me. It may be that the bird had not expected to see anything unusual in the clearing. At any rate, we both eyed each other for a good minute or so before it flew away. The bird was entirely black except for its scarlet-red head. For size, general configuration and body posture, I could not better describe it than saying it looked like a Brown-

headed Cowbird, only that its brown head was red — a red-headed cowbird, if you like.

That I should meet with an unusual bird at the river was not surprising to me then. I knew that the river's wooded slopes supported birdlife which was not found in the open parkland with which I was familiar just a few kilometres away. It was at about this time that I had seen an equally colourful bird new to me in a riverbank ravine, the Rufous-sided Towhee with its black, white and rufous plumage. Only later was I able to identify it from a sketch appearing in the *Mark Trail* comic strip by Ed Dodd.

With the bird seen at the campsite, I had no resource to go to. I knew a fair number of bird species from illustrations in outdoor magazines at our home or in school science textbooks, but the one-roomed rural school I attended had no books on birds at all. So I filed this sighting away in my mind, thinking that some day in the future I would have access to a book whose colour plates would vividly portray my bird,

In the meantime I had me a "mystery" bird. In this regard I was like Thoreau who would become my main object of research in adult life. He, a century earlier, had had three mystery birds: his "seringo-bird" (usually the Savannah Sparrow), his "evergreen-forest bird" (probably the Black-throated Green Warbler) and his "night-warbler" (almost certainly the Ovenbird).²

Of course, had Thoreau had a good set of binoculars and a modern-day field guide, these confusions would not have existed — although he liked to maintain, in his well-known *Walden*, that we require that in nature "all things be mysterious



and unexplorable".¹³ Just as he gives chase to the Common Loon in the "Brute Neighbors" chapter of his book, that bird, which represents the mystery, should ever elude him. Thoreau never did positively identify his "night-warbler", and his friend Ralph Waldo Emerson advised him not to try, for nature would then hold for him less mystery.

I, however, was still trying to identify my mystery bird. Living on a farm in the 1940s was different from what it is nowadays. I was taking my high school by correspondence courses at our living-room table, and since I did not bother to have my assignments corrected (it was cheaper that way), I lacked even that bit of contact with the city world. So far as visiting a city and its libraries where there might be bird books, that simply did not happen. But three years after my sighting of the bird in question, I sent for Peterson's *Field Guide to the Birds*,⁷ after seeing it described in a nature magazine. I ordered it directly from the Canadian distributor.

I was somewhat taken aback when on paging through this "Second Revised and

Enlarged Edition", my bird was nowhere to be found. I realized the guide covered eastern North America, up to roughly the 100th meridian so that all of Saskatchewan was not included. The book was nonetheless a treasure trove for me, and with it I was adding a dozen new birds to my life list (which I started then) on the next few "bird-hikes" I took. My mystery bird had to take a backseat to all the other birds I was identifying. And of course I had still the varied interests of most teenagers to fill up my spare moments: sports, music, art and literature.

Then in 1956 I spent a winter in British Columbia, and in preparation for going there, I purchased Peterson's *Field Guide to Western Birds*.⁶ At long last I would be able to name the bird I had seen almost a decade before. But my bird was nowhere illustrated, although again I had many new birds to identify. My use of this first edition (1941), incidentally, had its amusing sidelight. Most of the plates were not coloured, and the author had so religiously stressed the birds' black-and-white patterns as seen from a distance (this idea credited to Ernest Thompson Seton but suggested even earlier by Thoreau in his journal) that in some cases I had to squint in order to block out a bird's rich colouring or else stealthily *back away* from the bird before I could make sure of the identification.

So *my* bird (I had become quite possessive of it by this time) was not a North American resident in good standing. Was it perhaps a wanderer from another continent or from tropical regions? The notion of a bird of this type arriving in mid-continent did not seem very probable. Pough's three Audubon bird guides,^{10 11 12} which give a good coverage of wanderers to Canada and the United States, did not refer to any black bird with a red head.

My check of the *Field Guide to the Birds of Britain and Europe*⁸ turned up nothing either. Perusal of the *Field Guide to Mexican Birds*⁹ revealed nothing closer

than a Crimson-collared Tanager (black face and red rump), a Red-headed Tanager (olive and yellow body), and a tiny Red-capped Manakin (yellow "trousers").

I then began to consider all possibilities, no matter how far-fetched, in order to identify the bird. I could readily dismiss the suggestion that it had been spray-painted by some biologist away back in 1940s (Cf. Robert Nero's spray painting the tails of Great Gray Owls orange or green³.)

Another possibility was that the bird was some freak in nature, a mutant, briefly seen and never to be seen again. For precedence there was one classic case of a somewhat related incident, pertaining to botany and involving the pioneer botanists, John and William Bartram.¹ In their day much of America's flora and fauna was new to science, and on a botanizing trip to the Deep South in 1765, they discovered in the south-eastern mountains of Georgia, above the Altamaha River, a slender tree with the scarlet leaves of autumn but still bearing camellia-like white blossoms. It was a unique species, and John Bartram named it *Franklinia altamaha* for his closest friend Benjamin Franklin. They took some seedlings back to Pennsylvania, which did well under cultivation. In 1790 when William was again in the area, he collected more specimens. But that was the last time, almost 200 years ago, that the tree has been seen growing in the wild. It simply does not exist any more — except as descendants from the Bartrams' collection.

In my own situation I had no concrete evidence whatsoever, and I could not think myself so favoured as to be an exclusive witness to a unique phenomenon. Of course there are some unusual plumage variations in individual species — one Pacific race of the Yellow bellied Sapsucker has a red head, for example; however, my bird was definitely not a woodpecker.

Then there are two specific kinds of plumage variations, albinism and melanism — but, I wondered, could there be "reddism" too and that on a black bird's head? My mind boggled at the thought. Nonetheless, I considered the likely species where some form of "ism" might account for what I had seen — perhaps a melanistic tanager (Western or Scarlet)? But then — I paused for comic relief — why not a tanager fresh from a mudbath? I seemed to be at a dead end.

Finally I grasped at the possibility of a hybrid. Pearson's *Birds of America* speaks of the sex life of Brown-headed Cowbirds as being "free and untrammelled", with the birds conferring "their favours more or less generally". The females receive male attention "with generous impartiality". This, it should be noted, is among consenting adult cowbirds, that is, within the species. Of the Redwinged Blackbird, *Birds of America* says that the male sometimes mates "with several wives" — again within the species.⁵ Now . . . if this promiscuity were somehow extended between the two species (my imagination seemed to be running away with me) — if the "red" of a redwing's epaulet were somehow transferred to a cowbird's brown head. . . . More mind bogglement!

And there is yet an ultimate possibility, an explanation for the mystery bird. It involves a consideration that more than one naturalist has had to face in his bird-watching career — and that is a realization that he may have erred in his observation, that he just did not know what he saw. Still, when I think back to my sighting in 1947, I cannot discount it because of unusual lighting or far distance or indistinct colour markings. Although I have treated the incident in a somewhat humorous fashion, the image in my mind is as clear today as it was when I made the original observation 37 years ago

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GRANTS AVAILABLE FOR CANADIAN BIRD RESEARCH

The James L. Baillie Memorial Fund for Bird Research and Preservation invites applications for grants to support projects on Canadian birds in 1985. While grants have previously been restricted to Ontario, the fund will now consider applications from other parts of Canada.

The Fund's aim is to encourage field studies by amateur naturalists and to support projects which increase or disseminate knowledge of birds in their natural environment and/or contribute to their preservation. Priority will be given to projects which utilize the efforts of volunteer naturalists in conducting research or fieldwork and to applicants who have little or no access to other sources of support.

Two types of grants will be offered in 1985: (a) Project Grants and (b) Ontario Atlas Fieldwork Grants. Any project which has a volunteer component and otherwise meets the Fund's objectives is eligible for a type (a) grant. Type (b) grants provide partial support for travelling expenses to remote central and northern areas for fieldwork on the Ontario Atlas of Breeding Birds. Requests for funding of atlas projects elsewhere in Canada should be directed to type (a) grants.

Grants do not normally exceed \$1000. Applications for Project Grants are due by 31 December 1984 and for Atlas Fieldwork Grants by 28 February 1985. All applications should be submitted on forms obtainable from the Secretary. *The James L. Baillie Memorial Fund, c/o Long Point Bird Observatory, P.O. Box 160, Port Rowan, Ontario N0E 1M0.*

The James L. Baillie Memorial Fund awarded 5 Project Grants totalling \$1,475.00 and 9 Ontario Atlas Fieldwork Grants totalling \$3,420.80 in 1984. The Fund is financed in part from proceeds of the Baillie Birdathon. Donations to the Fund are tax deductible and may be sent to the address given above.

THE FUNEREAL BOREAL OWL

J. STAN ROWE, 18 Kirk Crescent, Saskatoon, Saskatchewan. S7H 3B2



Boreal Owl

R.E. Gehlert

Strange how the poet, striking words together, ignites the imagination. Just so Anne Szumigalski, with her poem *The Farm*, has set a-prowl in my mind the Boreal Owl.⁹ By what intuition did she link him to death in the city and life in the woods?

"night cries which once were owls in the woodlot
have become the calls of an ambulance
tearing through the streets to the morgue
what's the hurry asks the corpse in a gentle voice
the driver-paramedic doesn't have an answer".

And at the end

".. he wonders could it have been his own
in some other place full of rural temptations
where a log hut backs on the forest
the one window looking over a small barnyard
and beyond that a couple of ploughed fields
there on winter nights the boreal owl
hunts mice in the furrows".

The reference by a Saskatchewan poet to the Boreal Owl, cousin of the European Tengmalm's Owl to which Linnaeus gave the name *Aegolius funereus*, is apt. As Canadian as spruce groves and black flies, its year-round range coincides closely with our northern forests although recently it has been discovered nesting at high altitudes south of the border where, too, it is periodically "eruptive".⁸ Returning from the Second Franklin Arctic Expedition, Dr. John Richardson in 1827 collected a first specimen of the American subspecies near Fort Carlton, Saskatchewan, commemorated by Bonaparte in the trinomial *Aegolius funereus richardsoni*.³

The generic name *Aegolius* — of uncertain Greek origin but applied by Aristotle to one kind of owl² — bespeaks the classical training of Linnaeus but little else. More intriguing is the descriptive synonym *Cryptoglaux* used by some ornithologists, meaning the secretive or hidden (because nocturnal) little owl, "glaux", from its fierce, glaring eyes.^{4 10 7} When Homer described Pallas Athene (Minerva of the Romans) as "glaucopis" he probably meant flashing-eyed, the goddess sharing this startling ocular attribute, as well as wisdom and sagacity, with her feathered emblem the owl.⁷

The specific name *funereus* (or *funerea* when paired with *Cryptoglaux*) means "funereal"; an allusion to the owl's haunting call "as if wailing the dead".² This may be an imaginative generalization for all the owl tribe, whose members since Roman times have been regarded as portents of evil and death; mysterious, sinister, like ambulance wails in the night. With the exception of the Barn Owl, all species are assigned to the Strigidae, the strident screechers. The very word "owl" is the echoic base of ululate, meaning to mourn or lament. Obviously howls come from owls. But is this the voice of the Boreal Owl; does *its* cry justify the grave and somber specific name? My fragmentary ornithological library is equivocal.

Taverner pronounces it a "good" owl (it eats mice) but concerning its call he is mute and gives no hoot.¹⁰ Vogt says the voice of the Boreal Owl is a liquid note like dripping water.¹ According to Peterson its song is like a soft high-pitched bell or dropping of water (Bent), and also it has a harsh grating call.⁶ Seton says its voice goes "Ting, ting, ting".⁵ Dr. Merriam describes the call as a "low liquid note that resembles the sound produced by water dropping from a height; hence the Montagnais Indians call it *phillip-pile-tsichch*, which means "water dripping owl".⁴ According to their folklore, he says, the Great Spirit humbled the owl in size and reduced its great voice to a slow feeble drip when it impertinently imitated the sound of a cataract and tried to drown out its roar. But Scott says its call, heard only in the breeding season, is a short series of rapid hollow *hoo* notes.⁸ Will the real Boreal Owl please speak up?

Clearly a consensus is lacking. Although the hoot of *Aegolius* seems to be moot, the composite picture that emerges from my mostly American bird books is that of an amiable little owl, a bit of a dickey owl (Richard = Dick, richardsoni = dickey), a sort of rotund nocturnal hermit thrush making sounds of tinkling water in the wasteland, "very tame", decidedly unfunereal and most certainly not a poet's kind of bird. Did Linnaeus, then, err in its naming?

To the rescue comes the Saskatchewan team of Houston and Street, charitably saving the bad name of the Boreal Owl.³ According to them, Richardson (surely the authority on a bird saddled with his moniker) reported the night cry of *Aegolius funereus richardsoni* as a single melancholy note, repeated at intervals of a minute or two. Furthermore, he said, the Cree Indians call it *cheepai-peethees*, the Death-bird, and to them its nocturnal hootings are particularly ominous. *When they hear its note, they never fail to whistle, and if it does not reply to the whistle by its hootings, the*

speedy death of the inquirer is augured (my emphasis).

This local variation of Russian roulette — which incidentally is a promising method of population control, for it selectively eliminates male whistlers — must have perpetually decimated the ranks of the Cree, for Richardson went on to report that the owl is so common on the banks of the Saskatchewan River that its voice is heard by the traveller wherever he selects his bivouac. Nevertheless, few even of the hunters have seen the Death-bird, he said, for it never appears in the day.³

And so, happily, the name *funereus* is fitting. Though continents apart and unknown to each other, the Cree Indians vindicated that old artist Linnaeus as he vindicated them. Whether in Sweden or in Canada, whether called the classic Greek *Aegolius* or the classic Cree *Cheepaipeethees*, the Boreal Owl by consensus of northern taxonomists is funereal.

I feel better for that. And a deeper appreciation of one member of the local fauna gives me greater empathy with Anne Szumigalski's driver-paramedic and his dream-Farm. Regionally minded, I place him now in Prince Albert, where night cries that once were owls in the woodlot have become the calls of an ambulance tearing through the streets to the morgue. Away from the bright lights, somewhere on the river between Fort Carleton and Cumberland House, a log hut at the old farmstead backs on the forest; there on winter nights the Boreal Owl hunts mice in the furrows.

Despite rural temptations, relative safety and security reign at The Farm on those long winter nights, far from the city. But beware the return of spring and with it the breeding season of (*Aegolius*) *Cryptoglaux funerea richardsoni*. When, up and down the Saskatchewan River, the melancholy owl is heard once again in the gloom, let him who dares mimic its call.

Thank you Mary Gilliland for providing references numbered 2 and 7.

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ROCK WREN AT SASKATOON, SASKATCHEWAN

MURIEL CARLSON, 406 Spruce Drive,
Saskatoon, Saskatchewan. S7N 2N4

May 1984 was notable for its excessive heat and wind, which combined to form formidable dust storms in many areas of Saskatchewan. Saskatoon was not spared these conditions and thus it was not completely surprising, in retrospect, to find a bird that normally inhabits the arid southern areas of the province appear in my own backyard.

On 29 May I noticed a small bird hopping about in my backyard. At first I paid little attention, assuming it was another White-throated Sparrow or similar species. However, I soon noticed that this bird never flew to tree branches like most other species. Closer examination with binoculars indicated that I was observing a Rock Wren.

This species appeared to be slightly larger than the other wrens usually

observed in Saskatchewan, the upper parts were greyish brown, finely speckled, the rump was a cinnamon color and this color also appeared in part of the tail, which was subterminally tipped black. The breast was whitish, with fine streaks. To me, it's most identifiable field mark was its stance, a rather upright posture unlike the House or Marsh Wrens, and the fact that it would perch on my fence, deck, or hide under the furniture, but ignored the trees all around.

A quick check into all of my bird books was necessary before I put out a Rare Bird Alert to the Saskatoon members by telephone. Chris Escott arrived shortly after and confirmed my sighting. Members of long standing in Saskatoon inform me that a Rock Wren was seen in this city in 1974. I would be pleased to know if the Cathedral Peaks area at Tipperary Creek Heritage Site just north of Saskatoon would be a suitable habitat, as it is a south facing, arid cliff face which appears to qualify as a nest site. Perhaps this bird has been here but unobserved, since that site is only accessible by water.



Rock Wren

G.L. Holroyd

THE FOX SQUIRREL IN SASKATCHEWAN

C.I.G. ADAM, 2636 Argyle Street, Regina, Saskatchewan. S4S 0K1

In 1979 an unusual tree squirrel was observed in the Regina Cemetery, a well-treed area popular with local birders. Subsequent observations showed it was a Fox Squirrel; this identification was confirmed by Robert E. Wrigley, Manitoba Museum of Man and Nature, Winnipeg, from a photograph sent to him by the author. Since then, observations have occurred in Regina and in the southeastern portion of Saskatchewan, and two specimens have been obtained.

This paper reports the Fox Squirrel specimens and gives selected sight records to 1 May, 1984. Fox Squirrels appear to have invaded Saskatchewan from Manitoba and North Dakota, and they will probably continue to do so, paralleling the situation in other provinces and states. Due to its secretive nature, this species may have gone undetected in the province for several years. The purpose of this paper is to alert Saskatchewan residents to the presence of this relatively new species, and to speculate on means of its arrival and dispersal.

Regina Sightings

There have been many Fox Squirrel sightings in Regina since 1979, culminating in the observation of an adult attending young in 1984.

The first observation known to the author occurred on 10 November, 1979, in the Regina Cemetery (B. Luterbach, pers. comm. Luterbach also says that the cemetery caretakers saw the squirrels in the fall of 1978.) Observations continued in the Regina Cemetery, with two squirrels recorded in May 1980, and one in the spring of 1981. Squirrels were not seen in this location after this date.

In summer 1980 J. Jowsey and F. Brazier (pers. comm.) observed a Fox Squirrel in a grove of trees northwest of

the Legislative Building. On 13 May 1981, T. Riffel (pers. comm.) observed a squirrel in the same location sunning itself on a branch 6 m from a leaf nest.

In fall 1983 a Fox Squirrel was observed south of the Legislative Building in the vicinity of the tennis courts (Fig. 1). By its description it was identified as a Fox Squirrel by Wrigley (pers. comm.). Two squirrels were seen together at the tennis courts; single squirrels were observed in 1983 crossing College Avenue in the vicinity of the Saskatchewan Museum of Natural History, a distance of at least 1 km from the tennis courts (J. Jowsey, B. Luterbach, pers. comm.).

On 30 April and 1 May 1984, in a spruce tree at the tennis courts behind the Legislative Building, an adult was observed attending three young squirrels that appeared by their hesitant actions, to have recently left the nearby grass nest (T. Riffel, pers. comm.). The young squirrels were almost the same size as the adult, but differed in having sparsely-furred tails. This is the first evidence of the Fox Squirrels breeding in the province.

Fox Squirrels have also been recorded (as tracks) on Christmas Mammal Counts in 1979, 1980 and again in 1983.^{4 5 6}

Saskatchewan Specimens

Two specimens have been received by the Saskatchewan Museum of Natural History (SMNH) in Regina. The first (SMNH # 13101) was donated by S. Barber of the Saskatchewan Parks and Renewable Resources, Wildlife Branch, 12 December, 1980. The specimen is a male collected at Oxbow, on the Souris River, by an unknown individual. Measurements are: total length — 508 mm; tail — 225 mm; weight — 727 g. This is the



Figure 1. *Fox Squirrel* behind the Legislative Building, Regina, fall 1983.

Jon Triffo

first official specimen for Saskatchewan.

The second specimen (SMNH # 13490) is a cased skin donated in May 1983 by R. Beaulieu, Regional Biologist for the Hudson Bay Region. The skin was obtained from a trapper in the vicinity of Stove Creek, 26.5 km east of Kelvington, on the southwestern edge of the Porcupine Provincial Forest. The trapper has apparently seen a number of other Fox Squirrels there. The specimen was prob-

ably trapped in the winter of 1982-83 (R. Beaulieu, pers. comm.).

The author has examined both specimens and they are identical in appearance to the Regina squirrels.

Other Saskatchewan Sightings

Besides the Stove Creek and Oxbow specimens, there are a number of sight records. From Osage (on Highway 33, approximately 88 km southeast of Regina) came a report of a Fox Squirrel

electrocuted on a power line in the summer of 1983 (W. Russon, pers. comm.). R. Longmuir, Conservation Officer at Moose Mountain Provincial Park reports that Fox Squirrels apparently inhabit the Souris River valley as far west as Estevan. Longmuir states that he has seen several squirrels in the valley (pers. comm.) R. Kreba observed a Fox Squirrel at Weyburn 21 May 1979 and, in March 1984 several leaf nests in that city and along the Souris River to Estevan (pers. comm.). (Weyburn is situated on the upper reaches of the Souris River.) R. Tillie and D. Pingert have observed large numbers of Fox Squirrels at a campground near Roche Percee, on the Souris River east of Estevan (D. Baron, pers. comm.).

Adjacent Provinces and States

The Fox Squirrel's formerly recorded range was the eastern half of the continental United States, from Texas to Florida, north to the Great Lakes, and west to North Dakota.^{2 3 12} The species was introduced to Pelee Island, Lake Erie, Ontario in the 1890's, and a small population continues to flourish there. Pelee Island has long been the only known Canadian outpost of this species.

Manitoba's first Fox Squirrel, in fact the first official Canadian non-introduced specimen, was obtained near St. Claude, 97 km west of Winnipeg, 1 July 1972 (Figure 2).¹⁴ Two more specimens were obtained in 1977 (Mariapolis and Riverton),¹³ but since then, "almost two dozen" specimens have been received at the Manitoba Museum of Man and Nature, including one from the Lyleton area, near the Souris River and close to the Saskatchewan border (R. Wrigley, pers. comm.). There have also been a number of sight records.

Fox Squirrels have invaded Manitoba probably from North Dakota, and have now been firmly established for some time in the southwestern portion of that province. Wrigley feels that the Fox Squirrel will probably continue its expan-

sion in a northwest direction within the oak-maple-ash habitat.¹³

Fox Squirrels first invaded North Dakota in the early 1930's from Minnesota via the Missouri River.⁸ Over a period of 20 years the species spread up the major tributaries of the Missouri River where its range was confined to areas with sufficient tree growth. The natural spread was also augmented by several introductions. The current range is now almost statewide and the habitat presently occupied is riparian cottonwood forests and town parks.³

An examination of Fox Squirrel range maps shows trends to northwestern expansion.^{2 3 12} The spread corresponds mostly to deciduous forest along the major river systems. One notable extension occurs along the Yellowstone River for about 250 km southwestward from the Missouri River into the Billings, Montana, area.^{9 10} However, the species has failed to spread along the upper Missouri and Milk Rivers of northern Montana where dams have destroyed the cottonwood forests of the floodplains of these valleys.⁹

In Michigan, the spread of the Fox Squirrel in the 1800's and early 1900's was associated with the decline of the Gray Squirrel.¹ The Fox Squirrel spread northward in Michigan with the clearing of land for agriculture. Thus the Gray Squirrel, which preferred deep woods, was replaced in some areas by the Fox Squirrel, which selected woodland edges. Today, both species are common across Michigan.

The Spread Into Saskatchewan

As in Manitoba and the northern United States, the Fox Squirrel is invading Saskatchewan along the river systems, namely the Souris from North Dakota and Manitoba (the Oxbow specimen), and the Assiniboine from Manitoba (the Stove Creek specimen), and possibly along the Qu'Appelle and its tributaries. The lower Assiniboine and eastern Qu'Appelle River

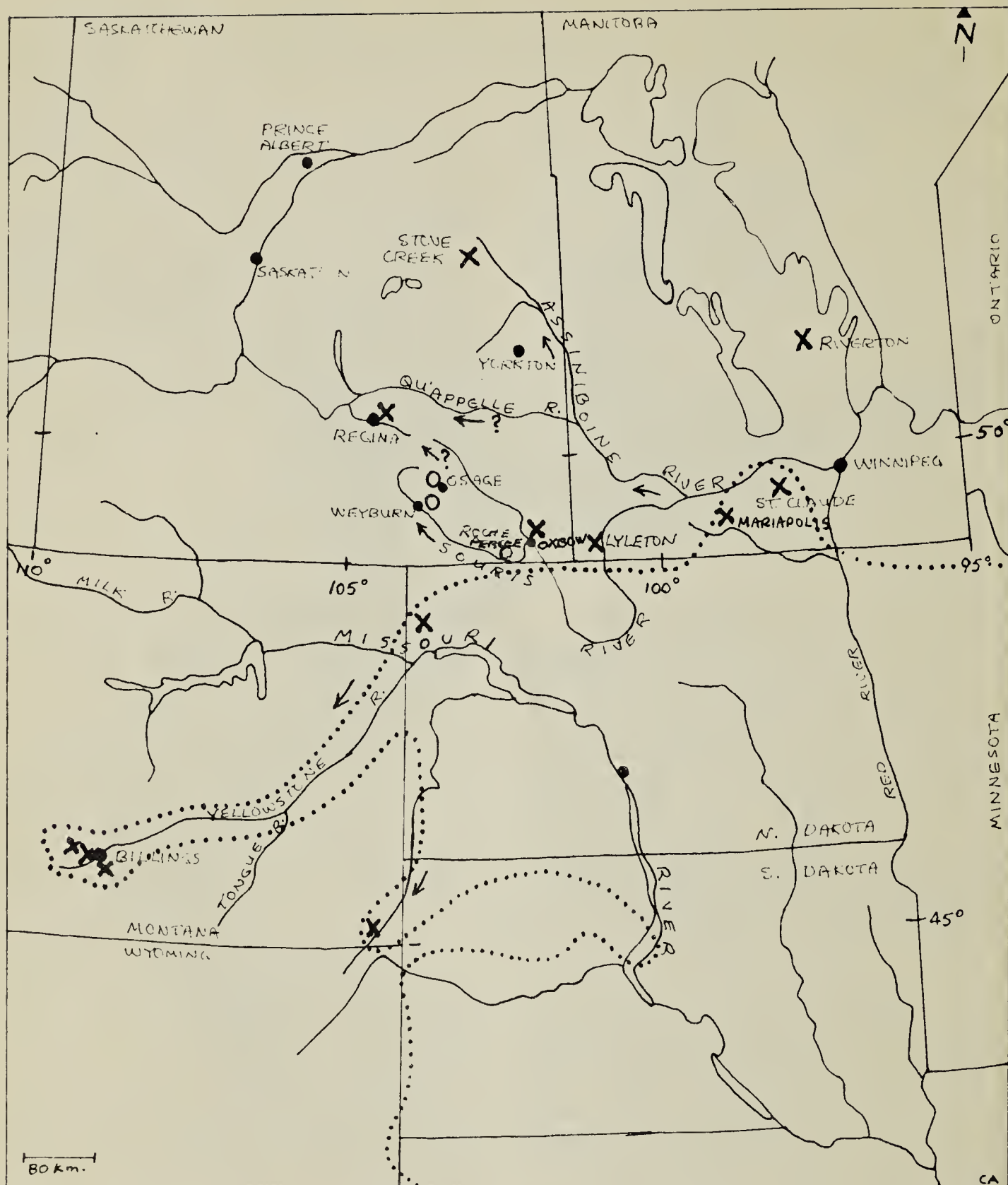


Figure 2. *Distribution of the Fox Squirrel, range . . . (after Hall³). X — specimens and confirmed sightings. O — unconfirmed sightings. → — invasion routes. (Not all Manitoba records included.)*

lie within the Aspen - Bur Oak Ecodistrict which extends along the Qu'Appelle as far west as Fort Qu'Appelle and along the Assiniboine as far north as Togo.⁷ The Stove Creek specimen indicates that the Fox Squirrel has spread beyond the limits of this ecodistrict and well into the Aspen Grove and Mixedwood Ecodistricts.⁷ Stove Creek is 10 km west of the northern

extent of the Assiniboine River. Assuming this is a natural occurrence and not an introduction, there is reason to expect that the Fox Squirrel will continue to expand its range westward along the edge of the Mixedwood Ecodistrict.

The Regina squirrels may have arrived by travelling westwards along the wooded

Qu'Appelle River valley and then south and east via Wascana Creek, which is a wooded valley to within 1.1 km of the city (Figure 2). These squirrels, if an introduction is ruled out, may also have arrived from the southeast via the Souris River, and Moose Mountain and Wascana Creeks, although the habitat is not suitable along most of the upper reaches. To make the jump between creeks would have required the squirrels to cross many kilometres of the treeless Regina Plain, but as they seem capable of doing this (R. Wrigley, pers. comm.), this arrival route may not seem so implausible.

In North Dakota, Fox Squirrels were seen as much as 80 km from suitable habitat, and there are many reports of squirrels in isolated shelterbelts.⁸ Fox Squirrels are residents of the transition zone between the forest and the prairie; the barriers to their advancement in Saskatchewan appear to be large areas of treeless prairie. Introductions by man in any of the above areas in Saskatchewan cannot be ruled out.

Physical Characteristics

The Fox Squirrel is a large, heavyset tree squirrel, much larger than the more familiar Red Squirrel, and slightly larger than the Gray Squirrel.¹² The subspecies in the northern portion of its continental range is *Sciurus niger rufiventer*.³ Average size is 54 cm (21 in.) with a tail about half that length. The tail of a Red Squirrel makes up about three quarters of the total length. Like the Gray Squirrel, the Fox Squirrel has three commonly occurring colour phases, red or buff, black and gray, one of which usually predominates in an area.³ The Fox Squirrels here are of the red phase, and are blackish-gray and orange on the back, with orange underparts and legs. Gray Squirrels, which are about the same proportions (half tail) are gray or black above and white or orangey-brown beneath (making confusion with the Fox Squirrel possible (R. Wrigley, pers. comm.)). The Red Squirrel has white to gray underparts

and a white eye-ring, with orange-red to olive brown back, sides of cinnamon and a summer flank stripe of black.

The tail of the Fox Squirrel is bushy with orange-tipped hairs, each guard hair having a black sub-terminal band. The orange-tipped guard hairs are a good field mark, since the Gray Squirrel always has white-tipped guard hairs on the tail. Tails of Red Squirrels are rufous-red above and gray below with a black band near the tip.

Fox Squirrels prefer forest edges and parkland areas, woodlots and city parks. Although they have adapted to city parks the Gray Squirrel seems to prefer deep woods to the forest edge.

Behaviour and Habits

The Regina Fox Squirrels are secretive in nature and are often difficult to approach. In most encounters, if seen at all, they will stop what they are doing, move to the trunk of a tree and freeze flatly against it, pointing upward with tail extended. They will move around the trunk in this position in response to the observer's movements, keeping to the opposite side of the trunk. Eventually they may bound away from tree to tree until their leaf nest is reached, where they may disappear for a long period of time. The freezing behaviour was observed at both Regina Cemetery and the Legislative grounds. (Fig. 3).

All three species of diurnal tree squirrel can inhabit large leaf and twig nests in summer and natural cavities in trees in winter; the Red Squirrel also inhabits ground burrows in the northern part of its range.²

Observers are invited to submit Fox Squirrel observations to the author and to the Saskatchewan Museum of Natural History to aid in determination of the range of this species in Saskatchewan.

Acknowledgements

Helpful suggestions, data, and a review of this paper were provided by R. Wrigley

of the Manitoba Museum of Man and Nature in Winnipeg. Tom Riffel, and Saskatchewan Museum of Natural History staff members Dave Baron and Robert Kreba also provided data and comments. Bob Luterbach and Tom Riffel of Regina provided observations of the Regina squirrels dating back to 1979.

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Figure 3. *Typical freezing posture of Fox Squirrel!*
C.I.G. Adam

NATURE LIBRARY

A BIRD-FINDING GUIDE TO CANADA

Edited by J.C.FINLAY. 1984. Hurtig Publishers Ltd., Edmonton, Alberta. 387 pp., 13 maps, 40 b/w illus., 2 appendices. Soft Cover \$18.95. hardcover \$27.95.

Canada finally has its first national guide to bird finding. Covering every region of the country, from 5 to 22 major birding areas are described for each province and territory: for the prairies, 12 areas in Saskatchewan, 18 in Alberta and 14 in Manitoba. Cam Finlay has relied on knowledgeable birders from every region to select the best areas and to write the accounts. The result is an authoritative guide which can help you plan trips to visit a new birding spot, be it near home or farther afield to Last Mountain Lake, Churchill, Point Pelee, Montreal, Sable Island, Tuktoyaktuk or the coastal and offshore waters of British Columbia and the maritimes. It can also help you find a particular species, maybe a Canyon Wren, Great Gray Owl, Northern Gannet, Yellow Wagtail, Whooping Crane, Henslow's Sparrow or Tufted Puffin.

The organization of the book is straightforward beginning with short sections entitled The Plan (the guide's coverage and how to find a given species), Helpful Suggestions (clothing, equipment, attracting birds and some sources of further information) and A Code for using the Out-of-Doors (a list of

common-sense but all too often forgotten do's and don'ts for the naturalist afield). These sections could have been enlarged to provide more useful information on nation-wide conservation programs and appropriate contacts of interest to the birdwatcher. For example, a listing of the main regional offices for Parks Canada, the Canadian Wildlife Service, the National Museums of Canada, the Nature Conservancy of Canada and Ducks Unlimited would help direct people to sites or provide them with current information on birds and access. Readers should also be cautioned that areas set aside for wildlife, be they sanctuaries, parks or wildlife areas, usually have some restrictions on access and public use to minimize disturbance to the wildlife and that the appropriate authority should be contacted before a visit.

The main part of the book (340 pages) consists of twelve chapters — one for each province and territory. At the beginning of each chapter is one key map showing locations of the major birding areas treated. These maps are clear and relatively error-free. Next is an overview highlighting bird specialties, ecological regions and provincial contacts. Then details are given for each birding area, including directions, accommodation, more contacts and of course the birds. A complete list of birds is not given for each area, rather each writer has chosen a mix of typical and rare species, indicating the best times of year to observe. Several "hot spots" are often described for one area (14 for the Dempster Highway, 16

for Ottawa and 10 for Jasper National Park), improving the coverage and opening up many more options for the birder. The 40 pencil drawings of birds by Terry Thormin add a great deal to the reader's pleasure, however, they could be cross referenced to the text.

A list of birds for each province and territory is found in Appendix A. The information is for the most part up-to-date and fairly accurate with species status designated as "breeding", "present and usually migrant" or "vagrant, accidental or very few records". More categories are needed to avoid including too many species in the middle category when they are probably less frequent in occurrence (species like Townsend's Solitaire, Clark's Nutcracker, Whooping Crane for Manitoba). The status of cuckoos, phalaropes and swifts in Alberta is incorrect and Western Screech-Owl does not breed in Saskatchewan as indicated. These errors suggest that the reader should use this information with caution. Also, my copy of the guide was bound in such a way that some facing pages in Appendix A were offset slowing the task of comparing species status for several provinces. The second Appendix lists recent name changes affecting Canadian birds.

The guide is small enough (5¼ x 8 inches and 1 lb. 2 oz.) to make it convenient to carry on a trip. The binding in my paper-back copy seems sturdy but the pages are only glued-in not sewn-in, and may not stand the test of prolonged or rough use.

The guide provides a great deal of excellent information for the prairie birder planning trips across Canada. Did you know that Golden-winged Warblers are common in part of Riding Mountain National Park, or that July is the best summer month to see pelagic birds off Vancouver Island, or that daily boat tours can take you to a spectacular seabird colony of 100,000 birds including the world's largest Northern Gannet colony on

Bonaventure Island? There are enough contacts given for most places to get you started easily despite some incorrect telephone numbers (for Saskatchewan) and the inevitable telephone number and address changes which will occur. Birders coming to the prairies for a first visit or to see a prairie specialty (Trumpeter Swan, Whooping Crane, Sage Grouse) are also provided with sufficient information to plan their trip.

Two major weaknesses of this guide make it more difficult to use for the novice and experienced birder alike. First, there are no detailed maps of even the major birding areas — only Ottawa is afforded the honour. By rearranging the beginning of each chapter to include the key map and title on one page, perhaps one or two detailed area maps could have been included with no overall page increase. Such maps might reduce the text length and eliminate the need for comments like "drive west", and "head north on" which don't mean much if you are going the other way. Secondly, and most seriously, there is no index to the birds described in the text. And despite early encouragement in the guide to "look it up in the checklist, then turn to the text to determine how, when and where to find that or other species" you will more often than not read about the "other species." Oh well, that's how I found out that Golden-winged Warblers breed in Riding Mountain.

The guide will do much to heighten our awareness of Canada's rich birdlife and strengthen our conviction that the best bird areas must receive adequate protection for the future. Cam Findlay and all the contributors are to be congratulated on producing a book of this high quality. Good birding to all those who use it.

I would like to thank Mary Gilliland for her assistance in checking the accuracy of the bird lists in Appendix A. — Reviewed by *Philip S. Taylor*, 1714 Prince of Wales Avenue, Saskatoon, Saskatchewan. S7K 3E5

TWO IN THE BUSH

ROSEMARY GAYMER. 1982. Illus. by E.B. SANDERS. 104 pp. \$7.95. (Available from the author through the Blue Jay Bookshop.)

People with absorbing hobbies like to share them. In *Two in the Bush*, we are invited to enjoy what Rosemary Gaymer calls her "special sightings" in nature, particularly of birds. A keen bird watcher since she was a very little girl in England observing birds at a feeder inside her bedroom window, she writes here of her encounters and interactions with North American birds met since she came to Canada in 1955.

The author assures us that all the accounts are true and that most of the essays were woven around notes written in the field immediately after the observation. She has grouped her observations around a single species or family of birds, or a common theme such as flight. "Summer Jewels", for example, is the title of an essay on hummingbirds, and "Aerial Spectacular" describes the flight of the Turkey Vulture, Red-tailed Hawk, Common Snipe and Common Nighthawk. On a few occasions, a single memorable day's events are recorded, as in "Mass Encounter", which describes an unforgettable migration. At other times, an incident may be recorded simply for its folksy charm, as when a noisy field cricket upstages a platform speaker in a country hall. The essays follow the progression of the seasons.

A fine sensitivity marks Rosemary Gaymer's observations, giving the reader the pleasure of a shared experience. Moreover, her observations include many points that casual birders miss. She has the serious bird student's interest in behaviour, and an eye for detail. Obviously, she is also a meticulous note taker, and she believes that "record-keeping is very much a part of the pleasure of bird watching." An aspect of bird behaviour

that fascinates Ms. Gaymer and that I think she should explore further for a scientific paper is their game playing.

Two in the Bush was published by a small firm (Amethyst) now no longer in business. Its editorial staff seems to have been unable to give the advice usually offered authors, for there are stylistic weaknesses that would normally have been corrected in the manuscript. Redundancies, cliches, inexact allusions, mistakes in sentence structure are usually eliminated by a helpful literary editor, and an outside reader would surely have suggested deleting the information about distribution and physical characters available in any bird guide, and that only detracts from a personal account of encounters with birds and other wild creatures.

The book must now be obtained from the author; this can be done by ordering it through the Blue Jay Bookshop. — Reviewed by *Margaret Belcher*, 2601 Winnipeg Street, Regina, Saskatchewan. S4P 1H8

THE MARSHLAND WORLD

RON WILSON and PAT LEE. 1982. Blandford Press, Dorset, England. Hardcover. 152 pp., 114 photos. \$22.95.

This fifth book in a series of books on natural history and the environment published in England by Blandford Press deals with marshes, a habitat type largely overlooked by natural history authors and publishers. The previous books in the Blandford series encompass topics from waterfowl and wading birds of the world to the study of nocturnal wildlife.

The *Marshland World* is a comprehensive look at the wet environment; the

topics range from what is a marsh, man and marshlands (crafts, eel-catching, water-fowling, marshland boats), marsh vegetation (aquatic and emergent plants, shrubs and trees), marshland animals (from invertebrates to fish through to mammals) to a consideration of the future of marshlands. Also Wilson and Lee provide an excellent comparison of freshwater and estuarine marshes while the common North American publications *Pond Life* (Golden Press) and *Freshwater Marshes* (University of Minnesota Press) focus almost exclusively on life within the freshwater system.

The uniqueness of this book lies in the section on crafts, the section dealing with reed husbandry, eel-catching and marshland boats. The cutting and harvesting of reed (*Phragmites australis*) for thatching is an important activity even today in British marshes. A variety of methods and tools for cutting and handling the reed are illustrated. The discussion of harvesting practices includes consideration of how frequent to crop and the influence of weather on the crop — questions with a familiar ring. The description of thatching is fascinating. This section includes comment on the quality and selection of material, the types of tools and the variation in technique in various areas of England. Other crafts included are basket making and reed weaving.

For eel-catching, the techniques described are similar to those employed by eel fishermen in Nova Scotia; good descriptions and photographs show what these are.

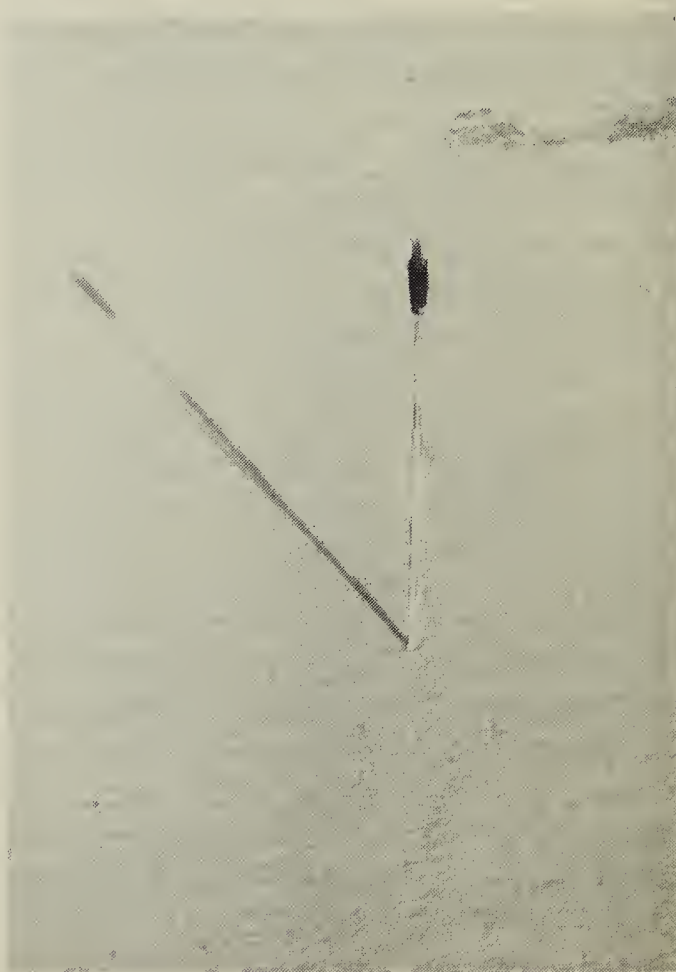
Prairie people have a great affinity for water, contrary to what might be expected, therefore many will find the history and use of marshland boats of great interest. Wilson and Lee described four boats specifically designed for marsh use.

The sections dealing with plant communities, individual plant species, the invertebrates, fish, amphibians, bird and

mammals are detailed and informative. They are illustrated with excellent photographs. The only weakness I found in this book is the paucity of photographs of invertebrate life.

The Europeans share with us the problems of drainage and marsh manipulation for the perceived good of man rather than for the good of the marsh and its inhabitants. The solutions offered are few — the use of the Ramsar agreement, an international agreement for the protection of marsh areas nominated by a country. We of course have the Marsh Heritage program. What we need is a larger commitment by both urban and rural people to the conservation of these unique areas. Although this book is written about English marshlands, after reading it a North American would have the urge to visit a marsh.

It is a book which I will treasure in my library. — Reviewed by *E.A. Driver*, 22 Red River Road, Saskatoon, Saskatchewan. S7K 1G3



Winter Marsh

J.B. Gollop

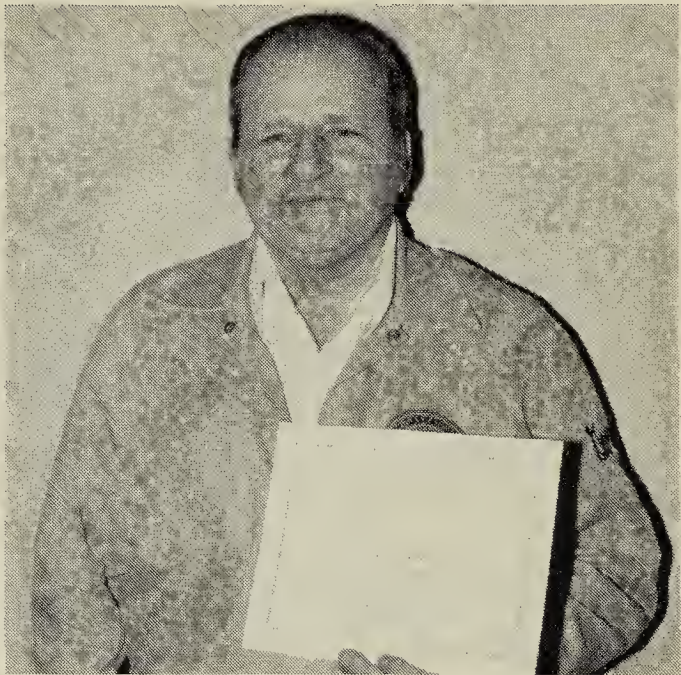
SOCIETY NEWS

SNHS AWARDS 1984

I wonder if this is the first time in the history of the SNHS awards that none of the recipients has been present to receive their honors at the annual meeting? The three awards will go to the following people:

The Cliff Shaw Award will go to Robert W. Nero of Winnipeg for his untiring study of the Great Gray Owl in Manitoba for which he summarized 15 years of work in the September 1984 Blue Jay. Not only is Bob busy with his own research, but he is very active in encouraging others to study nature and report their findings. Through his efforts and encouragement of others we were able to produce a "special issue" on the Great Gray Owl.

George Davies of Moose Jaw was winner of the Conservation Award. George is a golfer. When he learned that the local course at Moose Jaw was tiring of the Burrowing Owl nests on the fairway, he undertook to move them to the rough. George found a design for a Burrowing Owl nest box and put ten of them out. He then worked with Golf Club officials to fill in the old holes on the fairway. His initiative allowed the owls to continue nesting successfully without conflict with the Moose Jaw golfers. We hope to have more information on this fascinating project in an upcoming issue.



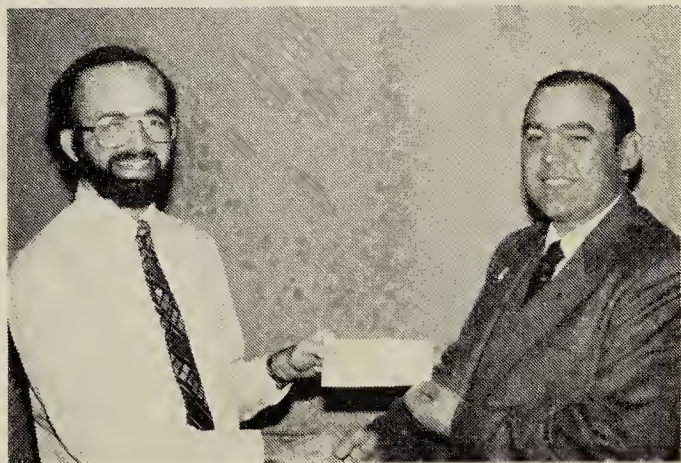
George Davies

Sheina Wait



R.W. Nero

R.R. Taylor



Lorne Scott receiving a cheque from Stan Shadick for \$5000. for the Heritage Marsh Project from S.N.H.S. Sheina Wait

SASKATCHEWAN NATURAL HISTORY SOCIETY

Balance Sheet as at September 30, 1984*

INCOME:

Membership - regular		\$19,659.38	
- sustaining and patron		2,713.57	\$22,372.9
Donations - general		\$ 706.44	
Grants - Sask. Culture & Recreation	\$6,000.00		
Sask Sports Trust	2,070.00	8,070.00	
Interest received		3,530.92	
Miscellaneous income		75.00	
Tours		1,771.05	
Sale of Society publications (1,049.50 - 103.36)		946.14	
Bookshop sales	\$28,295.68		
Less cost of sales	21,357.30		
Gross Profit (24.5% of sales)	\$6,938.38		
Less costs: postage & other expenses (4.5%)	1,261.18		
Less Honorarium (8.0%)	2,270.88		
Net Bookshop profit (12.0%)		3,406.32	18,505.8
TOTAL INCOME			\$40,878.8

EXPENSES:

Advertising & promotion	\$1,611.99		
Less grant from Tourism & Small Business	523.32	\$1,088.67	
Audit costs for 1983:		49.76	
Conservation activities:		9,000.00	
Bank Charges		10.10	
Computer rental, material costs and reserve		4,945.85	
Honoraria (900 + 250 + 650)		1,800.00	
Meeting expense		(49.73)	
Membership in other organizations		85.00	
Miscellaneous office and administrative		98.15	
Office supplies & stationery		613.06	
Postage & Express - general		1,374.82	
Blue Jay (4 issues)		15,578.77	
Blue Jay News (3 issues)		3,750.65	
Telephone cost		574.00	
Travel (excluding Board meetings)		1,462.68	
TOTAL EXPENSES			\$40,381.1
NET INCOME			\$ 497.0

ASSETS:

Cash on hand - Bookshop			\$ 40.0
Cash on hand - Current account - Bookshop	\$ 2,887.34		
- Current account - SNHS	3,739.08		
- Savings account - SNHS	18,331.81	24,958.0	
Investments - Regular term certificates	37,699.36		
Life Membership Trust Investments	8,129.07	45,828.0	
Stock on hand - Bookshop		8,495.0	
Interest receivable		1,943.0	
Deposits with Post Office		28.0	
Customer accounts receivable - Bookshop	\$ 1,059.03		
Less customer prepaid accounts	268.25	790.0	
Supplier prepaid accounts - Bookshop		143.0	
			\$82,227.0

LIABILITIES:

Accounts payable - SNHS	\$ 5,263.86		
Deposits on Whooping Crane tours	1,395.00		
Payment from Sask. Sport Trust for first quarter 1985	10,540.00		
Education tax payable - Bookshop	90.70		
Honorarium payable - Bookshop	\$ 2,270.88		
Less prepaid	400.00	1,870.88	\$19,160.0

TRUST ACCOUNTS:

Habitat Conservation Trust	\$ 8,364.13		
Heritage Marsh	1,983.88		
Mouth of Big Gully	—		
Bird Atlas	500.00		
Other Projects - grant from SPRR for research	1,568.75		
NCC Ecological Resources	1,050.00		
Reserve for special publications	2,050.00		
Reserve for computer purchase	4,000.00		
CWS Trust Fund re Webb	2,235.27		
Life Membership Trust Fund	8,129.07		
Total Trust Fund			29,881.0

NET WORTH:

Opening balance	\$32,619.62		
Plus Bookshop adjustment	69.46		
	32,689.08		
Plus Net Gain	497.03	33,186.11	
TOTAL LIABILITIES, TRUST FUNDS & NET WORTH			\$82,227.0

* For more detailed statement contact the Treasurer.

